

COMMERCIAL CAR JOURNAL

with which is combined Operation & Maintenance

Reg. U. S. Pat. Off.

Acceptance under the Act of June 5, 1934, authorized December 18, 1934.
Published monthly.

Member C.C.A.

Vol. LVIII Philadelphia, October, 1939 No. 2

Editorial Department

JULIAN CHASE, *Directing Editor*

GEORGE T. HOOK, *Editor*

C. B. RAWSON Managing Editor HENRY JENNINGS Technical Editor HOWARD KOHLBRENNER Art Editor

J. ALBERT LAANSMA Contributing Editor JOSEPH GESCHELIN Detroit Technical Editor

MARCUS AINSWORTH, *Statistician*

L. W. MOFFETT & JAMES G. ELLIS, *Washington Editors*

B. M. IKERT, *Chicago Technical Editor*

EDITORIAL CONTENTS

Copyright 1939, by Chilton Company (Inc.)

Feature Articles

We "Picket" The Post.....	18
There's Method in Our Maintenance	20
Reprieve for the Chain Gang.....	22
Diary of a Discontented Dairy.....	26
The National Truck Show.....	29
Texas Fleetmen Pool Ideas for Better Jobs.....	32

Specifications

Commercial Car Journal Truck Specifications Tables	49
--	----

Descriptions

Two New Diamond Ts	34
New Car Wood Load-Packer.....	36

Departments

Free Books, Booklets, Catalogs	17
Ears to the Ground	17
The Overload	17
CCJ Quiz	17
Body of the Month	24
Shop Hints from Fleet Shops	30
New Truck Registrations	36
Showcase of New Products	38
CCJ Newscast	40
Free Money Savers for You	97
Advertisers' Index	118

C. A. MUSSELMAN, Pres.; J. S. HILDRETH, Vice-Pres. and
Manager Automotive Division; G. C. BUZBY, Vice-Pres.

OFFICES

Philadelphia—Chestnut & 56th Sts., Phone Sherwood 1424. New York—
239 W. 39th St., Phone Pennsylvania 6-1190. Chicago—Room 916,
London Guarantee & Accident Bldg., Phone Franklin 4243. Detroit—
1015 Stephenson Bldg., Phone Madison 2090. Cleveland—609 Guardian
Bldg., Phone Cherry 4188. San Francisco—444 Market St., Room 305,
Phone Garfield 6788. Los Angeles—6000 Miramonte Blvd., Phone Lafayette
5525. Long Beach, Cal.—1595 Pacific Ave., Phone Long Beach 613-238.
Washington, D. C.—Room 1061 National Press Bldg., Phone District 6877.

SUBSCRIPTION RATES: United States and United States Possessions and all Latin-American countries—\$3.00 per year. Canada and Foreign—\$4.00 per year. Single copies—40 cents.

Owned and Published by



CHILTON COMPANY
(Incorporated)

Executive Offices

Chestnut and 56th Streets, Philadelphia, Pa., U. S. A.

Officers and Directors

C. A. MUSSELMAN, *President*

FRITZ J. FRANK, *Executive Vice-President*

FREDERIC C. STEVENS, JOSEPH S. HILDRETH, GEORGE H. GRIF-
FITHS, EVERET B. TERHUNE, *Vice-Presidents*; WILLIAM A. BARBER,
Treasurer; JOHN BLAIR MOFFETT, *Secretary*; JOHN H. VAN DEVEN-
TER, JULIAN CHASE, THOMAS L. KANE, CHARLES S. BAUR,
G. CARROLL BUZBY, P. M. FAHRENDORF.

COMMERCIAL CAR JOURNAL
OCTOBER, 1939

When writing to advertisers please mention Commercial Car Journal

COMMERCIAL CAR JOURNAL, Vol. LVIII, No. 2. Published monthly by Chilton Co., N. W. Cor. Chestnut & 56th Sts., Philadelphia, Pa. Subscription price: United States and Possessions, Mexico and Latin American Countries, \$3.00 per year; Canada and Foreign, \$4.00 per year. Single copies, 40¢, except April Issue, \$1.00. Acceptance under the Act of June 5, 1934, authorized December 18, 1934.

FOG LAMPS

A 3-Way Bid
FOR FALL BUSINESS

THREE APPROVED fog lamps with a single thought . . . to make driving safer in adverse or fair weather. Beautiful. Efficient. Practical. A boon to every driver of commercial or pleasure cars.

— APPROVED —

MODEL No. 855

7" lens. America's classiest fog lamp.

MODEL No. 857

6" lens, but built like No. 855.

MODEL No. 850

6" lens. Popular priced.

MODEL No. 855
... a "honey" for looks and utility.



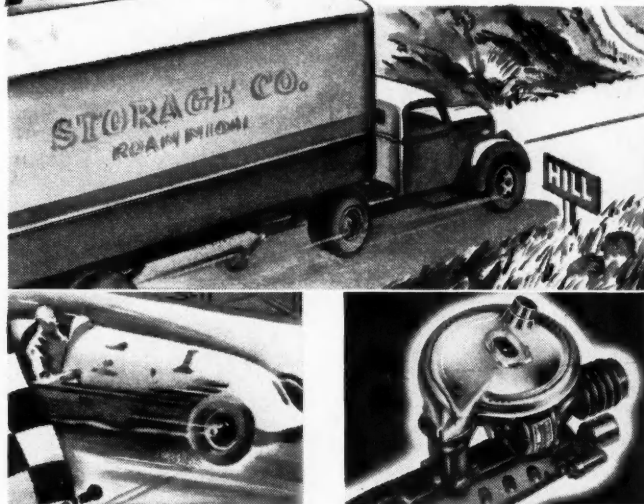
Write for advance 1940 I.C.C. Rules and Charts

Members by Invitation—Rice Leaders of the World Association

The **K-D Lamp Co.**
CINCINNATI, O.

WIN GREATER PAYLOADS

with *Plus* PERFORMANCE



First and second place honors went to supercharged cars at the last 500 mile classic. In fact seven out of the ten prize winners were supercharged—the secret of winning performance, power and endurance.

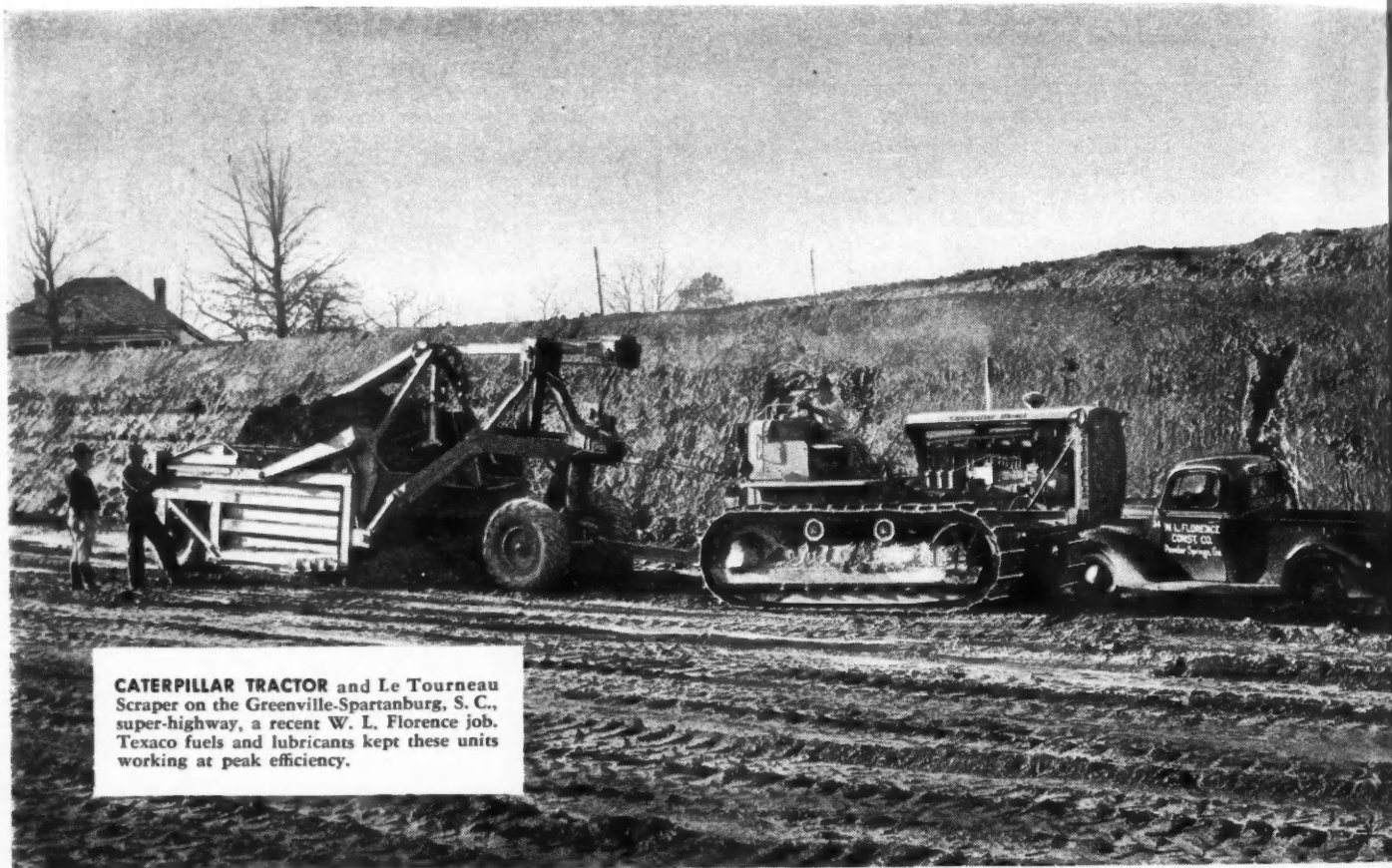
SUPERCHARGER

For Ford V-8 trucks steps up power 38%, increases torque and gas mileage. Overcomes power loss at high altitudes. For greater profits from your present Fords, equip with McCulloch Superchargers.

Write for Facts and Folder Today

MCCULLOCH ENGINEERING COMPANY
3223 NORTH 31st STREET • MILWAUKEE, WISCONSIN

EQUIPMENT



CATERPILLAR TRACTOR and Le Tourneau Scraper on the Greenville-Spartanburg, S. C., super-highway, a recent W. L. Florence job. Texaco fuels and lubricants kept these units working at peak efficiency.



One of the W. L. FLORENCE POWER SHOVELS loads into a truck. Both are Texaco lubricated.

TEXACO

When writing to advertisers please mention Commercial Car Journal

COMMERCIAL CAR JOURNAL
OCTOBER, 1939

The OVER load

Post Graduate Course

It will be a pretty dull November for the students of the truck industry when COMMERCIAL CAR JOURNAL fails to publish a Highway Transportation Show Issue, but that will not be this November. At this time next month there will come into your hands the Fourth Annual Highway Transportation Show issue which is designed to keep you up to date and perhaps a little ahead of the industry, its equipment and its methods.

Index

For months now editors have been scouring the land for traces of new products which fleet men can start using from next month on. Descriptions of all that's new will be in the issue under its correct clas-

sification. It will make good reading and it will keep you and your fleet from going stale.

Cast of Characters

Norman Bel Geddes will let his fancy fly and tell you what the younger generation will be doing in a highway transportation way when we oldsters are combing our beards. Ted Rodgers, president of the American Trucking Association, will have a word to say. Chester Gray, National Highway Users Conference, will tell you what the various legislatures have done or intend doing to your business. Wm. H. Ott, president, National Council of Private Motor Truck Owners, will describe the plight of the private truck operator. These are just a few of an all-star cast.

Curtain Call

This could go on for a long time, but we are neglecting the issue you have in your hands. On page 20 and again on page 26 there appear experience articles of operator-authors. First hand stuff. On page 22 there is a Prisoner's Song with lyrics gathered from several fleets. Designer Westberg got around to delivering from store to store this month with his Body of the Month. Shop Hints on page 30 still serve as a reminder that you, too, can make \$5. A couple of magazine editors write letters to one another on page 18 and it seems they do not agree on one or two points.

EARS TO THE ground

Signal Score

When enough reports reach the top sergeant's desk he can with simple arithmetic spot a trend. If we have not grown too rusty to add a column of two digits it seems certain that directional signals are increasing as standard equipment on passenger cars.

Ford Facts

While among the mass production assembly lines our minion also discovered that Ford has changed the shift lever position from the middle of the floor to the steering column on all passenger cars. Some suspension and appearance changes also impressed him.

Chevrolet Chukker

While probing the passenger car situa-
(TURN TO PAGE 86, PLEASE)

The fall term of the CCJ continuation school opens with 10 questions. If, scoring 10 for each question, you do not get 70 you sit at the foot of the class. If you make 90 you get a seat near the window and if you get a perfect score you can bring teacher a nice red apple.

(Correct answers on page 62)

1. The letters B.T.U. have a special meaning when used in combination, and your first job is to designate which of the following they stand for:

Butane Timing Unit	Brown-Lipe Trans- mission Unit
British Thermal Unit	Bundy Tubing Union

2. When you do not need gasoline there seem to be millions of gas stations but when you need it they seem a long way apart. That does not change the total number of gas stations in the country, which is

10,000	125,000	325,000
60,000	250,000	490,000

3. Now that you are an expert on gasoline you should know how many gallons are sold in this country in a year.

Five hundred mil- lion	Five hundred bil- lion
Twenty billion	Twenty trillion

4. The United States Bureau of Public

CCJ QUIZ

Roads has had a good deal to say about trucks and if you wanted to further identify it you would say it is a part of the
Department of Agri- Treasury Depart-
culture ment
Department of the War Department
Interior

5. The ability of truck drivers to keep out of accidents is always being discussed but chances are that you cannot tell whether the statistics show that truck drivers are

Better than average	Above average
Worse than average	No statistics avail- able

6. When truck drivers have their eyes examined and the report says "tunnel vision," which of the following does it mean:

Can see better than ordinary at night.
Cannot focus in bright sunlight.
Can see better with optometrist's tunnel.
Cannot see objects approaching from the side.

7. One of the following statements is untrue and it is your job to pick out which one:

Henry Ford was once a race driver.
Walter P. Chrysler once made a living wiping locomotives.
G. W. Mason is president of the Nash-Kelvinator Corp.
Wm. S. Knudsen is a native of Sweden.

8. Three of the companies named have a manufactured product in common. You must pick out which are the correct three.
Thornton Tandem Eberhard Mfg. Co.
Co. SKF Industries
Trucktor Corp. A. L. Hansen Mfg.
Truck Equipment Co. Co.

9. Hearings were recently held around the country to determine if private carriers should be regulated as a safety measure. These hearings were held by the
ICC National Safety
AMA Council
ATA National Safety
SAE Foundation

10. 1939 is a big centennial so far as the automotive industry is concerned. It is the one hundredth anniversary of
The invention of the internal combustion engine.
The drilling of the first oil well.
Discovery of the vulcanization of rubber.

AFTER hours
EDITORIAL COMMENTS BY *George J. Hook* EDITOR

We "Picket"

THE POST



TABLE OF MAXIMUM LENGTH
RESTRICTIONS FOR A
COMBINATION OF TRUCK UNITS
1931 Compared with 1939
(Bold Figures Indicate a Reduction in
Length)

	1931	1939
Alabama	46	40
Arizona	85	85
Arkansas	85	45
California	60	60
Colorado	85	50
Connecticut	40	40
Delaware	60	60
Florida	45	45
Georgia	45	45
Idaho	85	65
Illinois	65	40
Indiana	40	40
Iowa	45	45
Kansas	50	45
Kentucky	No Limit	30
Louisiana	85	45
Maine	62	40
Maryland	No Limit	No Limit
Massachusetts	40	40
Michigan	60	50
Minnesota	60	40
Mississippi	No Limit	55
Missouri	40	40
Montana	60	60
Nebraska	50	45
Nevada	No Limit	60
New Hampshire	85	45
New Jersey	85	50
New Mexico	85	45
New York	85	50
North Carolina	85	45
North Dakota	65	40
Ohio	85	60
Oklahoma	No Limit	45
Oregon	65	50
Pennsylvania	70	70
Rhode Island	85	85
South Carolina	50	45
South Dakota	50	40
Tennessee	No Limit	35
Texas	45	45
Utah	85	50
Vermont	No Limit	50
Virginia	85	45
Washington	85	60
West Virginia	85	45
Wisconsin	60	45
Wyoming	85	45
District of Columbia	85	85

1931 statistics published in March, 1931, issue of Commercial Car Journal.

1939 statistics published in April, 1939, issue of Commercial Car Journal.

Analysis: Reductions in Length Legally Effected by 33 states. Increases in length—NONE.

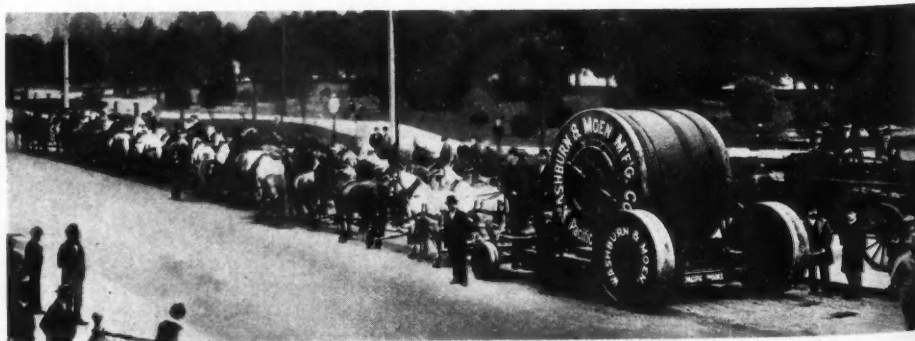
In place of the customary After Hours comments we treat readers this month to correspondence that has passed between the Editor of the Commercial Car Journal and the Editor of the Saturday Evening Post. The cause of the correspondence was an article scare-headed "Freight Trains on Our Highways" which appeared in the August 19 issue of The Post. In initiating this correspondence Commercial Car Journal took the position that it would be derelict in its duty to the truck industry if it permitted certain statements made in The Post to go unchallenged. Readers will agree that the more responsible the quarter from which criticism of trucks emanates the more need there is for a challenge.

Letter from the Editor of the Commercial Car Journal to Wesley Winans Stout, Editor of the Saturday Evening Post

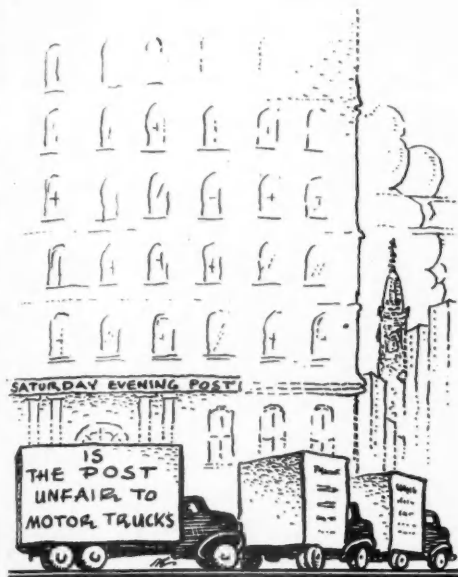
DEAR MR. STOUT: Aug. 31, 1939

In its issue of August 19, the SATURDAY EVENING POST published an article entitled "Freight Trains on Our Highways" which in title, in presentation and in a good portion of its content is astoundingly unfair

to the truck industry as a whole and particularly to that segment of the industry known as the for-hire field. The unfairness, in fact, approaches the vicious because two of the major premises of the article are wholly inaccurate. These two utterly false premises refer to the size of motor trucks and to the growth in use of motor trucks, and are the foundations for arguments which serve no other

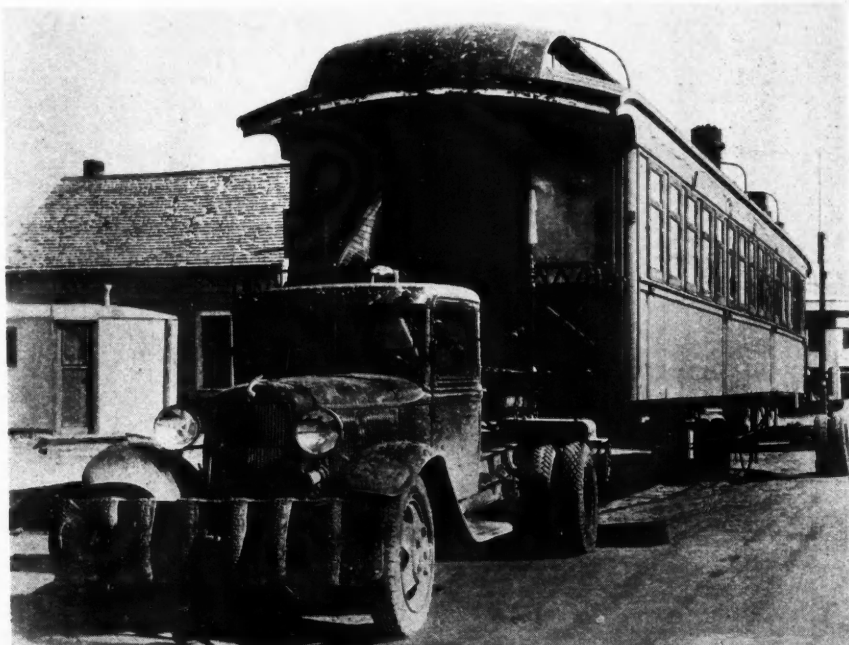


COMMERCIAL CAR JOURNAL
OCTOBER, 1939



Right: In its search for the grotesque in highway transportation, The Post overlooked these fine examples. Fleetmen do not need to be told that super jobs require special permits.

Below: A truck manufacturer poses the question: "Which would you prefer, one truck or 50 horses on the road?"



purpose than to place motor trucks in a light which should be treated as alarming by "the 25,000,000 motorists who also use the highways."

One such argument is stated early in the articles (page 8), as follows: "Motor trucks—'highway freight trains,' both common carriers operating lines several thousand miles long and 'contract carriers' operating over shorter distances,

but with 100-ton loads—are getting bigger and bigger."

The only premise for such a statement can be the claim that state legislatures have loosened up in their restrictions on the size of motor truck trains and passed laws increasing their overall length.

That is far from being the case. The fact is that "highway freight trains," as THE POST prefers to scare-

term them, have been growing smaller and smaller during the last nine years until today they are at an all-time small. As proof we offer the accompanying tabulation of maximum lengths for "combinations of units," as the industry rightly calls them. This tabulation gives the maximum lengths permissible in 1931 and in 1939 by the 48 states and the District of Columbia. It shows that during that period 33 states reduced maximum lengths, some of them drastically. It also shows that not a single state authorized an increase.

The other argument, which borders on the inflammatory, is stated a trifle further on (page 9), as follows:

"Trucks in freight service are increasing rapidly; last year they went into service at the rate of nearly 1400 weekly, or 200 a day, which was unusual; but if they (TURN TO PAGE 64, PLEASE)



m **THERE'S** **Method** **in Our Maintenance**

and here's the low-down on a dozen shop-designed tricks that put teeth in our drive to cut cost and eliminate delay

By **FRED W. RICE**

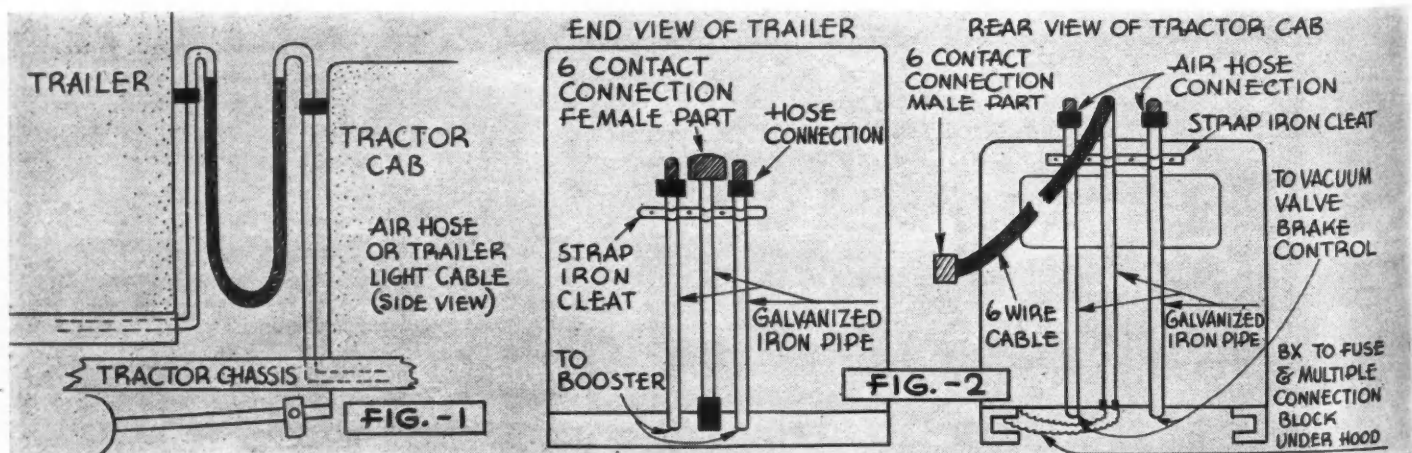
Director, Safety and Maintenance
Cushman Motor Delivery, Chicago



Tractor air line attachment and shop-built gas tank are visible here . . .

WE are certain that a number of the new methods which we have developed during the past three years in the shop of the Cushman Motor Delivery Co. of Chicago, have resulted in large savings in our fleet operating costs. However, we have not assembled and it would be extremely hard to get actual figures to show the cost savings from any one of our improved shop practices, as compared with our former practices. Indeed it is doubtful, in my opinion, if any maintenance man in a small general shop like ours would be able to point his finger at any one cost item in a general list of shop costs and certify that this figure was absolutely correct.

The certainty that our shop has made substantial savings in our fleet





... and tarpaulin arrangement here. Drawings below show details of air hose and electrical connections, tarpaulin frame, card box & trailer reinforcement

operating costs is based in part on the general experience of our company, which is engaged in common carrier motor freighting service into four states surrounding Chicago, and which today owns and operates 23 tractors with trailers, 17 city pick-up trucks, and 2 extra trailers. The company also supervises the operation of about 60 additional units of leased equipment, but the shop and maintenance experience of this latter equipment will not be included in this article.

Our new shop operating methods undoubtedly have had an important part in enabling our company, during the past three years, to advance from a poor safety record among like fleets in the Chicago area to the position of group winner during the

past three annual contests of the Interfleet Drivers Safety Contest of the Greater Chicago Safety Council. During the same period the company likewise has been able to reduce the costs of its Public Liability and Property Damage insurance by more than two-thirds; and to reduce the costs of its Cargo insurance by more than three-fourths.

Some of these results have been due to concurrent changes in our company personnel regulations and practices, including the selection of a few new drivers to replace some of our old drivers. However, we are certain that a large part of the recent improvement in the operating cost of our fleet may be credited to our new shop methods.

Each new shop method or equip-

ment installation which I shall describe has been made as a result of the study of a previous shop operating waste or failure. Some of these admittedly have come from seeing similar ideas employed in other fleets or other businesses. But in practically all we have made additions or changes which have made them, we believe, more practical for our own fleet. Following is a list of some of our new cost-cutting shop practices:

1. Pipe extension to protect air lines.
2. Improvements in lighting cables.
3. Improved three-way gas tank valves.
4. Better fifth-wheel mounting.
5. Improved trailer "tarp" frame.
6. Mounted box for trailer papers.
7. Trailer body reinforcements.
8. Stencils for tractor and trailer lettering.
9. Greasing and batteries records.
10. New tire checking methods.
11. Improved gas tanks and shop welding.
12. Brakes adjusted for drivers.

The new "pipe extension to protect air lines" is a good illustration of improving an old device. (See Fig. 1.) Pipe is used under all makes of trailers, in their vacuum brake system. But we have added more pipe and carried this pipe up the front end of the trailer so that we can use it not only for our brake system but also to support and lift one end of the air hose about five feet above the level of the trailer floor. In like manner we have extended the pipe carrying the other end of the air hose up the rear of the tractor cab to the same five-foot level. The result is that the loop in our air hose (necessary in case of jack-knifing) is never

(TURN TO PAGE 74, PLEASE)

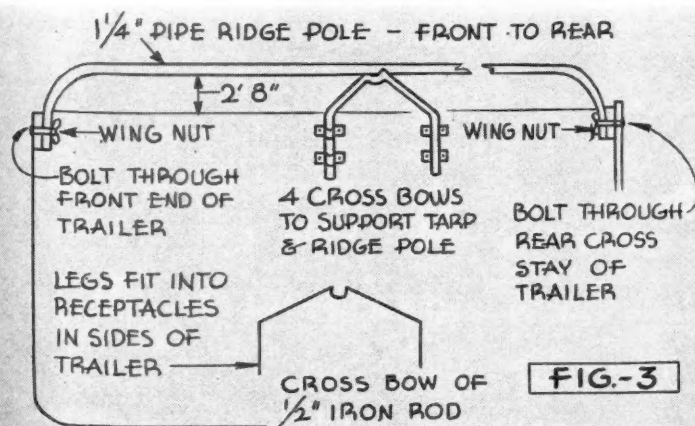


FIG-3

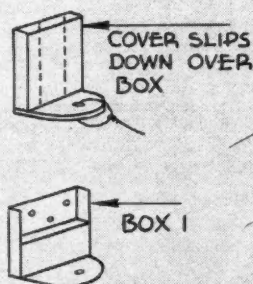


FIG-4

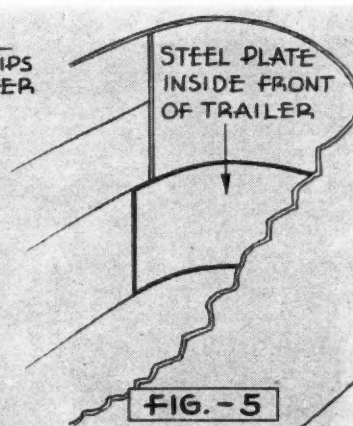


FIG-5

REPRIEVE FOR THE

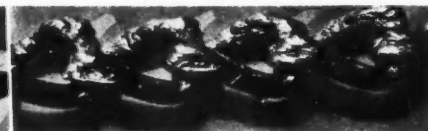


CHAIN

Shops prepared in advance to maintain tire chains can reduce the "fine" and earn time off for good behavior

SOcial documents appearing in movies, magazines and books would have you believe that chain gangs have about disappeared from the American scene. As a set of circumstances and conditions surrounding a not too pleasant method of spending a spell of penal servitude, they are probably right. But they reckon without the fleet operators of the country.

In fleet shops a chain gang still exists. It consists of the mechanics who interrupt whatever they are doing, whether it be eating dinner, grinding a set of valves or sleeping, when the first snow falls and scurry to that part of the shop where chains



Worn truck chains (left) get new life by welding on new wear-resisting metal

are kept. There they struggle manfully and frequently under great handicaps to get the chains on trucks so that the trucks may roll on schedule without the loss of life and fenders. This gang will be enslaved in

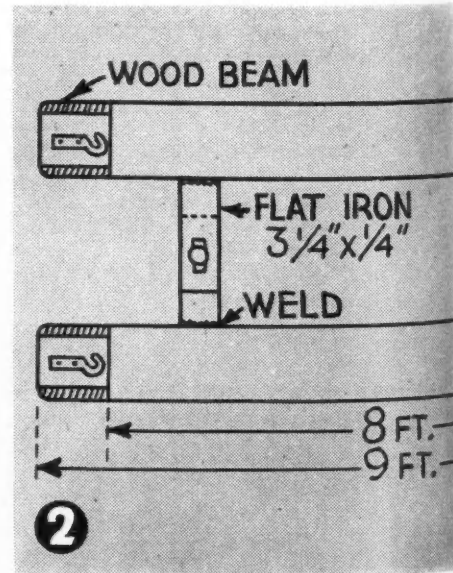
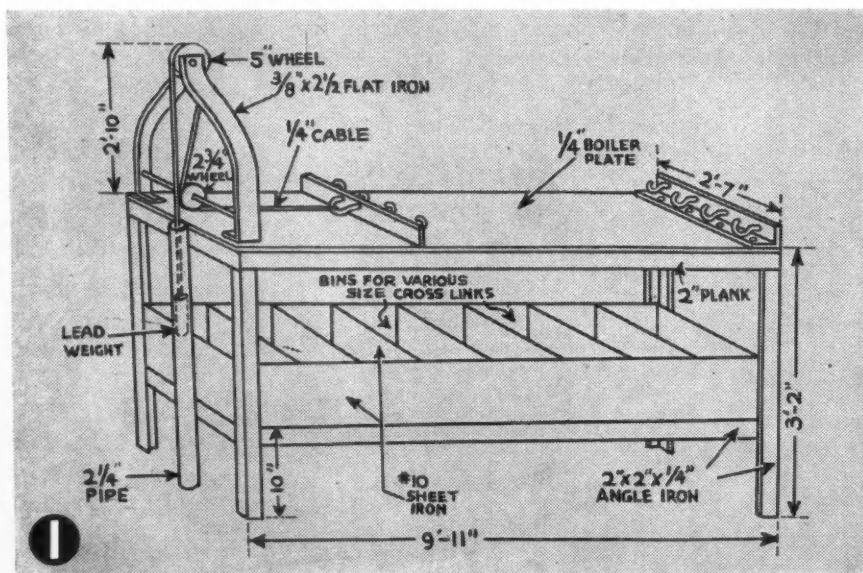
their chains throughout the northern three-quarters of the United States, possibly within another month. They will not escape spasmodic service until spring.

The members of the chain gang

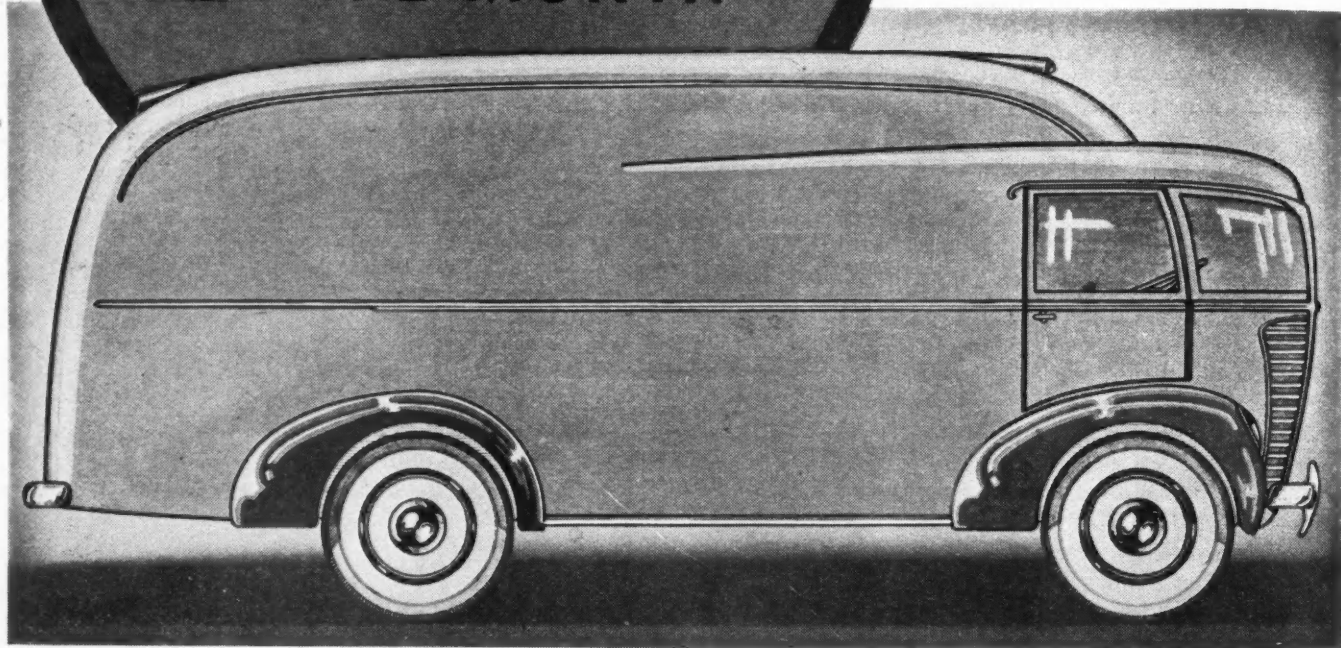
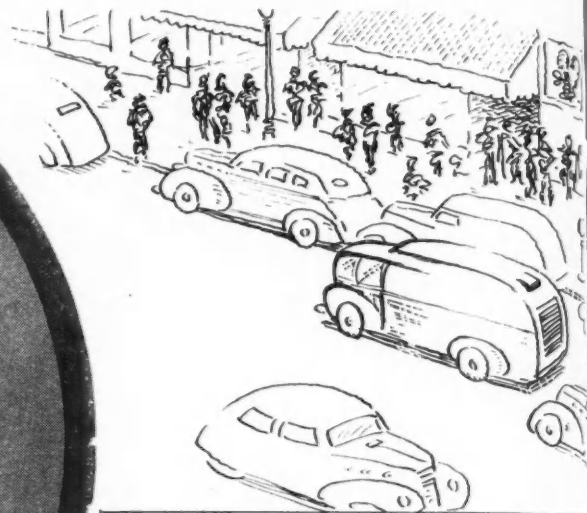
Top of page: The right man, the right tool, but the wrong way to replace

links. Benchwork is considered safer and easier and may be brought to

any shop in such forms as shown below. For details of bench, Fig. 1,



The BODY OF THE MONTH



PREPARED AND COPYRIGHT 1939 BY E. M. WESTBURG

VOCATIONAL USES

Glamour and eye appeal for the truckman's and warehouseman's door to door delivery unit through the medium of streamlining, is the effort of this month's design.

It should attract a great deal of attention on its short runs from the trucker's terminal to the final delivery points.

DESIGN

Ultra modern streamlined contours are this unit's outstanding design fea-

tures which make it different and more radical than the average van of this type.

The cab over engine type of chassis was selected for this type of work for ease of handling through city traffic and to facilitate parking in close quarters which are every day conditions in this type of work.

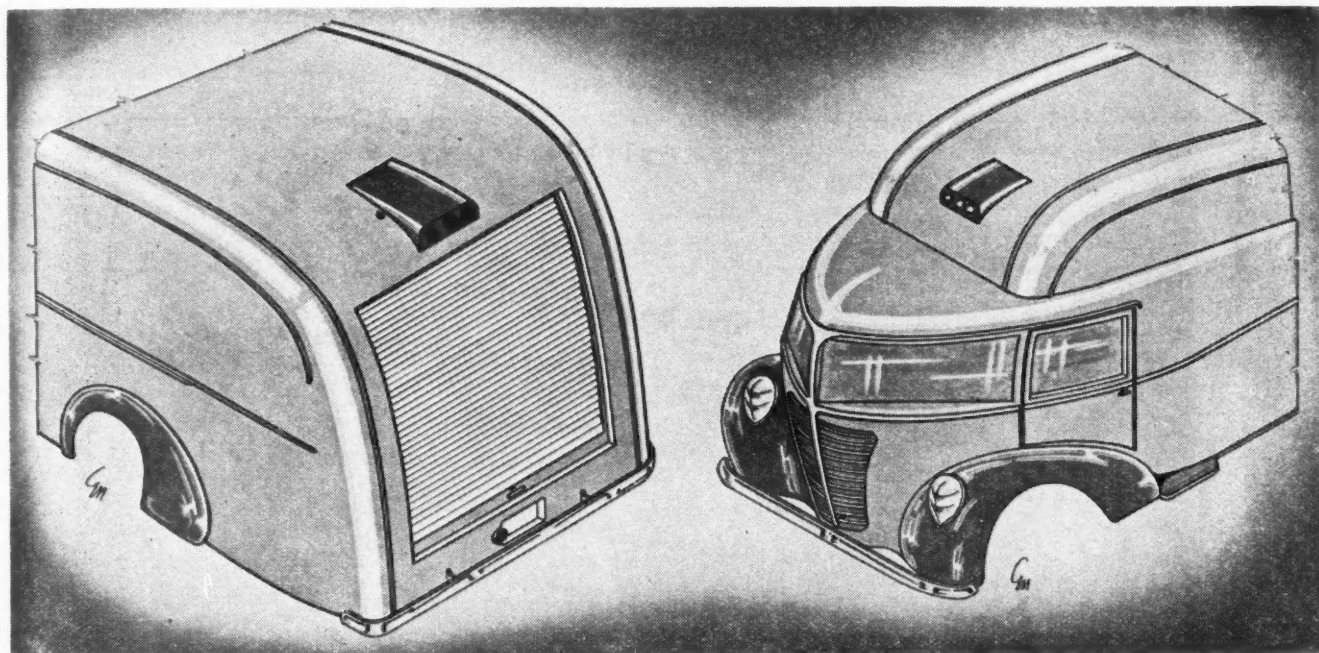
BODY MATERIALS

To keep the cost of a design as radical as this down to a minimum it is the designer's suggestion that a

composite type of construction be used. Framing should be hard wood with either steel over plywood panels or metal-faced plywood panels. The roof should be either all steel or canvas duck for further economy. A choice of lining is suggested between tongue and grooved fir to the belt line with slats above or heavy plywood solid from floor to head rail. The flooring should be oak and where heavy service conditions are encountered a steel strip laid over each joint.



This is the twelfth in Commercial Car Journal's series of original body designs. Once again let us remind fleet men that the designer has worked in body shops and knows the practical problems of building truck bodies. All designs are copyrighted but arrangements can be made with the designer for procuring complete construction drawings and specifications. For further details address The Editor, Commercial Car Journal, Philadelphia, Pa., November body of the month—a retail house-to-house ice cream delivery unit.



BODY DESIGNER. DESIGN No. 12. STORE-TO-STORE VAN

DETAIL FEATURES

The extreme "V"-shaped windshield plus a wide door gives a great deal more glass area than the average body of this type, effecting greater visibility.

A roll-up type door is used on the rear for speeding up deliveries and to facilitate unloading in close quarters where swing around doors may prove cumbersome.

Streamlined running light mounting boxes are used to improve the general appearance of the body.

BODY DIMENSIONS

The dimensions of the body illustrated are 15 feet long by 6 feet 6 inches high by 7 feet 6 inches wide. All are inside clear loading space sizes. Obviously this design is not restricted to these specific dimensions, but can be varied to meet the individual trucker's requirements.

COLOR SCHEMES

Though radical in line and contour this design is adaptable to any color

scheme which the operator may now be using on his fleet. The design as illustrated was painted a light shade of green all over with dark green fenders and straw wheels and trim.

NOTE TO READERS

The designer and editors welcome requests for designs of particular types. The present plan takes into consideration peak buying periods of important vocations, but is subject to change.

DIARY

OF A DISCONTENTED DAIRY

1935. Trucks cost too much to run. Our new ones will help but there is much more to do. Gasoline mileage, for instance, can be increased by better driving and careful heat control.

1936. Oil analysis and better lubes increase oil and grease mileage. Special tires cost more but give 25% more miles.

1937. Preventive maintenance cuts shop and labor costs. Accurate records forecast trouble before it comes.

1938. Culmination of four-year plan shows overall reduction in fleet operating expense of 23 per cent. Still gunning for trouble.

P.S. For account of why we're more contented than we were in '35... See accompanying story.



Above: The author makes sure the fleet's mechanical adjustments are right by the use of an exhaust gas analyzer



... and assumes personal responsibility for all entries in the master records where data are at his finger tips

A SYSTEMATIC campaign for lower truck operating costs carried out over a period of four years has brought the over-all operating cost of our 56-truck fleet down 23 per cent in that time. Replacement of old trucks with new ones helped, but accounted for only part of the gain. Careful purchasing, accurate records, preventive maintenance and exceptional driver cooperation did the rest.

Over the four-year period our tire costs were lowered 30 per cent, and our grease and oil costs, 36 per cent. There was a 20 per cent reduction in gasoline consumption and the fixed labor expense was cut 13 per cent. Further on we will treat each of these subjects separately so that other operators may see the effectiveness of our campaign. But first, a general picture of the fleet.

By A. T. FROST

Fleet Superintendent
Kristoferson's Dairy, Seattle, Wash.

In 1935 our average truck was 10 years old and had an average operating cost per month of \$79.64. Eleven of these trucks were replaced toward the end of 1935, 32 more in 1936, eight in 1937 and two in 1938. By the end of that year cost per truck per month had been lowered to \$60.94. Full depreciation of the new units is included in these figures on a basis of 100 per cent in six years.

The lower operating costs of the new trucks convinced us that there is a point beyond which it is more expensive to keep an old truck than to turn it in, and on the basis of our experience we replaced the last of the

old trucks in 1939 with 11 new ones.

We have standardized our fleet to two different make trucks best suited for our particular type of hauls, which gives us the advantage of interchangeable parts, easily comparable performance for statistical check-up and best driver adaptation. The greater number of our trucks are 1½-ton types with open bodies and stakes, with seven of the newer units of the 1¼-ton size.

In making city deliveries of milk and dairy products we must maintain regular schedules on a short stop-and-go basis. Due to the great variety of hauls, which range from 12 to 80 miles a day, there is a great difference in operating costs of individual units.

The tabulations (at left) give the total number of miles traveled during the year commencing with 1935, and show the total cost each year for tires, grease and oil, and labor as well as the miles per gallon of gasoline and per quart of oil. Omitted from the table are the operating costs of four trucks not handled from this plant and of 10 passenger cars in order that a true picture may be had of truck operating costs as related to route service.

(TURN TO NEXT PAGE, PLEASE)

COMPARATIVE FLEET COSTS—1935 to 1938

Year	No. Trucks Operated	Total Mileage	Tire Costs	Grease and Oil Costs	Labor	Gas Mileage per Gallon	Oil Mileage per Quart
1935	60	507,748	\$3600	\$1450	\$15,407	6.3	63
1936	56	546,566	\$1146	\$1217	\$12,660	6.8	160
1937	56	542,114	\$2447	\$1308	\$13,039	7.1	150
1938	56	561,943	\$2500	\$ 925	\$13,309	7.4	190

DIARY

OF A DISCONTENTED DAIRY
(Continued from page 27)

KRISTOFERSON'S DAIRY		Month	Year
TRUCK COST		Route	Truck
FIXED EXPENSES			
Dep. Chassis			
Dep. Body			
Insurance			
License			
Taxes			
Garage Expense			
Unemployment & F. O. A. B.			
Pro-rated Labor			
TOTAL FIXED EXPENSES			
VARIABLE EXPENSES			
Total Gas Cost			
Total Gas Labor			
Total Oil Cost			
Tire Cost			
Repair Chassis—Parts			
Repair Chassis—Labor			
Repair Body—Parts			
Repair Body—Labor			
Repair Accident—Parts			
Repair Accident—Labor			
Washing—Labor			
Grooming—Labor			
Grease Cost			
Misc Expense			
Pro-rated Labor			
TOTAL VARIABLE EXPENSES			
GRAND TOTAL			
ANALYSIS OF OPERATION			
No. Miles Operated			
No. Days Operated			
No. Days in Shop			
Gasoline Used (Gals.)			
Average Miles Per Gal. Gas			
Oil Used (Qts.)			
Average Miles Per Qt. Oil			
Average Fixed Cost Per Mile			
Average Variable Cost Per Mile			
Average Total Cost Per Mile			
Cost Per Day			

Kristoferson's records include the monthly truck summary (above), a driver's trouble ticket and daily fleet summary (right) and vital statistics of each vehicle (immediate right). The small slips are issued to the men as stimulants to better driving

As stated above the new trucks accounted for part of the lowered cost picture. But they did not account for all of it. We have positive proof that we have increased our gasoline, oil and tire mileages far beyond that saved by the new equipment and our reduced labor cost was the direct result of strict adherence to a preventive maintenance routine and better shop control. Here's how we did it.

Increased Gas Mileage

Gradual increase in gasoline mileage from 5.3 miles per gallon in 1935 to 7.4 miles per gallon in 1938 is the result of better driving on the part of our operators in conjunction with the use of a gas analyzer which gives us a check on mechanical adjustments necessary, and replacement of old trucks with new equipment. In order to partially overcome the problem of insufficient temperature we have installed 160-deg. thermostatic control and circulation of water. We also keep fabricoid radiator coverings on

the trucks all year around to help keep the motors warm.

The most effective means we know of for training drivers to reduce gas consumption is the issuing of a personal "Gas Consumption Report" to each driver at the end of every month, together with comparative figures for the previous month, and a list of six suggestions to be followed in driving. (See illustration). Despite the fact that our gas mileage had been gradually increasing since 1935, the introduction of this individual gas consumption record in July, 1938, resulted in an average increase of four-tenths of a mile per gallon per driver at the end of the first 30 days.

Reduced Tire Costs

Considering that tires now cost us at least 27 per cent more than in 1935 the fact that we have accomplished a reduction of 30 per cent in (TURN TO PAGE 112, PLEASE)

KRISTOFERSON'S DAIRY		MOTOR VEHICLE TROUBLE TICKET	
Item No.	Trouble With	✓	Nature of Trouble
1	Engine		
2	Carburetor		
3	Fan		
4	Ignition System		
5	Battery		
6	Lights		
7	Clutch		
8	Transmission		
9	Differential		
10	Steering		
11	Brakes		
12	Radiator & Pump		
13	Springs		
14	Speedometer		
15	Body		
16	Fenders		
17	Tires		
18			
19			
20			
21			
22			
Work Required	Date		
Work Performed	Date		
Noted and Filed	Date		

KRISTOFERSON DAIRY		KRISTOFERSON DAIRY	
P. M. Inv.	Day	A. M. Inv.	Day
Date		Date	
Truck	Route	Truck	Route
Speedometer	Qts. Oil	Speedometer	Qts. Oil
Gas. Cost		Gas. Cost	
BA		BA	
BB		BB	
BC		BC	
BD		BD	
BE		BE	
BF		BF	
BG		BG	
BH		BH	
BI		BI	
BJ		BJ	
BK		BK	
BL		BL	
BM		BM	
BN		BN	
BO		BO	
BP		BP	
BQ		BQ	
BR		BR	
BS		BS	
BT		BT	
BU		BU	
BV		BV	
BW		BW	
BX		BX	
BY		BY	
BZ		BZ	
C		C	
D		D	
E		E	
F		F	
G		G	
H		H	
I		I	
J		J	
K		K	
L		L	
M		M	
N		N	
O		O	
P		P	
Q		Q	
R		R	
S		S	
T		T	
U		U	
V		V	
W		W	
X		X	
Y		Y	
Z		Z	

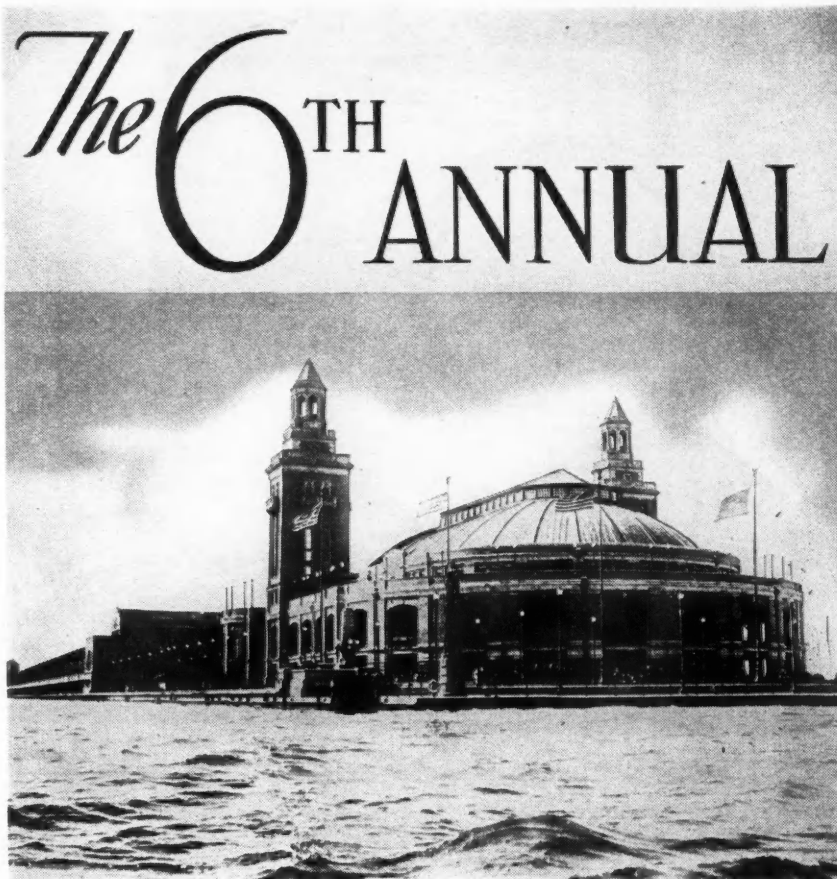
VEHICLE RECORD		KRISTOFERSON DAIRY	
Equip.	Mod.	Cost of Chassis	Body No.
Year Mfg.	Date in Service	Cost of Body	
Rated Capacity		Cost of Tires	
Chassis No.	Weight	TOTAL	
Engine No.	Engine Mod.	Dep. Rate Chassis	
Weight Unladen		Dep. Rate Body	
No. of Cyl.	Bore	Dep. Rate Tires	
Wheel Base	Axis Ratio	License Fee	
Tires, Front	Rear	Insurance Fee	
Ign. Key No.	Door Key No.		
License No.			

FLEET SUMMARY	
Make	Model
Rodge S 6	
Rodge S 8	
Packard Coupe	
Packard Sedan	
Shop	
Plant	
Employees	
TOTAL	

TRUCK SHOW EXHIBITORS

(As of Sept. 12, 1939)

American Bosch Corp.
 American Safety Tank Co.
 Auto Truck Steel Body Co.
 Bendix Westinghouse Automotive Air Brake Co.
 Buda Co.
 Bendix Aviation Corp.
 Butler Mfg. Co.
 Connecticut Tel. & Electric Corp.
 Continental Motors Corp.
 Davis Welding & Mfg. Co.
 De Luxe Products Corp.
 Fleet Owner
 Four Wheel Drive Auto Co.
 Fruehauf Trailer Co.
 Hegeman-MacCormack Corp.
 Heil Co.
 Hercules Motors Corp.
 Mack Trucks, Inc.
 Marmon-Herrington Co.
 New Britain Machine Co.
 Wm. Powell Co.
 Quaker City Iron Works
 Timken-Detroit Axle Co.
 Titeflex Metal Hose Co.
 Trucktor Corp.
 Waukesha Motor Co.
 Walter Motor Truck Co.
 Gar Wood Industries
 Aetna Auto Parts Co.
 Highway Trailer Co.



TRUCK SHOW

Opens on Chicago's Navy Pier, November 8. Educational exhibits to promote highway transportation are planned and expected to draw general public along with industry

PLANS for the Sixth Annual Motor Truck, Highway Transportation and Accessory Show are developing rapidly, according to John F. Winchester, president of the National Motor Truck Show, Inc., who states that tentative reservations made during the Summer months are being rapidly affirmed and additional prospective exhibitors have expressed interest in obtaining space. Exhibitors to date are listed elsewhere.

Besides the truck show, scheduled for the week of Nov. 8 to 16 inclusive, on Chicago Navy Pier, a number of other highway transportation matters will engross the attention of Chicago visitors. The exhibition will be held simultaneously with the annual convention of the American Petroleum Institute, and the National Tank Truck Manufacturers Association. The Chicago section of the SAE has tentative plans for a Transportation meeting during truck show week and the Associated Traffic Clubs of Amer-

ica will conclude their annual meeting on the opening date.

It is also proposed to hold, under the auspices of the National Motor Truck Show, a symposium on highway transportation at which papers will be presented by national authorities. Professor John S. Worley, head of the Transportation Engineering department of the University of Michigan, has already been scheduled to speak and announcements of other speakers will follow.

The sixth annual banquet of the

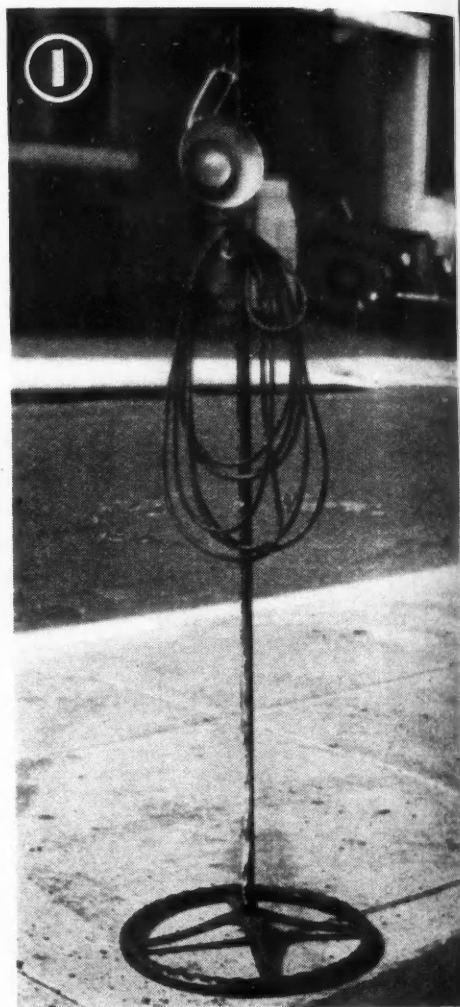
National Motor Truck Show will be held at the Palmer House in Chicago on Tuesday evening, November 14, at which time the leaders of the industry will be invited to gather around the banquet table.

National Motor Truck Show, Inc., is an organization comprised of a cooperative group of manufacturers and operators. The primary object of the truck show is the promotion of highway haulage and this year it is the intention of the sponsors to stress

(TURN TO PAGE 111, PLEASE)

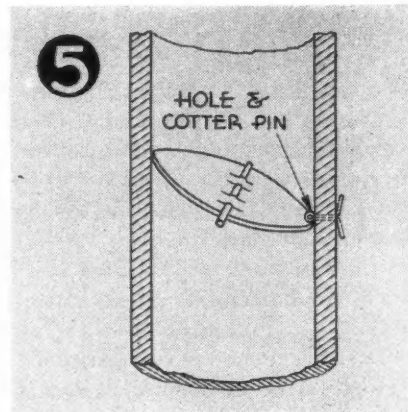
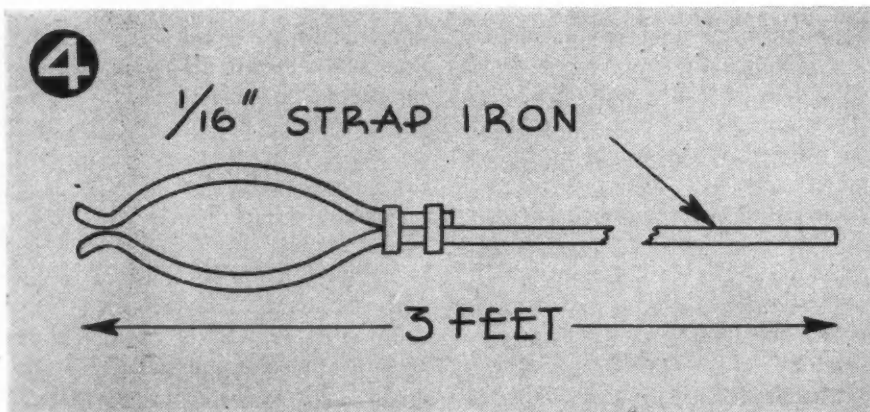
\$5

Do you want to make \$5 easily? Commercial Car Journal will pay \$5 for every shop hint accepted for publication on these pages. Simply send in an outline of an idea, process or tool which you originated in your shop or which you believe to be unusual. Do not worry about literary or artistic style. Acceptance is based on the idea. CCJ will prepare it for publication.

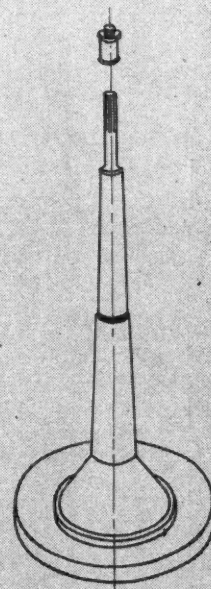
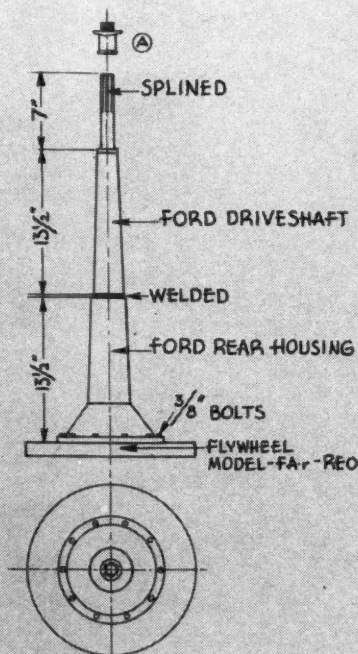
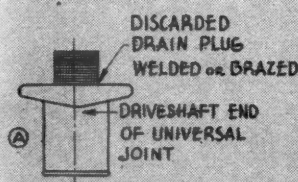
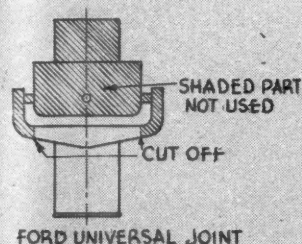


Shop Hints

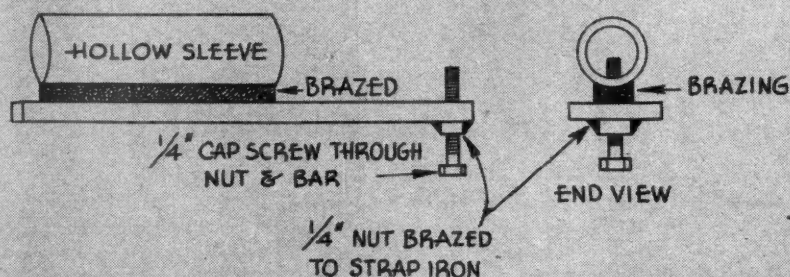
FROM FLEET SHOPS



2



3



1. Shop Light

By Paul Werner

Northwood Garage, Philadelphia.

We have made what we consider a very good working light. It is made from an old steering wheel, a length of $\frac{3}{4}$ in. pipe, a pipe union and a piece of $\frac{1}{2}$ in. steel rod. The steering wheel was tapped and the pipe screwed into it and then a set screw was installed into the union at the other end of the pipe. The steel rod is held in place with the set screw and a light mounted on the end of the steel rod. The light is adjustable for height and it never seems to get knocked over.

2. Transmission Stand

By Frank P. Caccia

General Baking Co., Woodlyn, N. J.

The drawing shows a transmission stand which we built in our shop. It is built entirely of salvage materials.

COMMERCIAL CAR JOURNAL
OCTOBER, 1939

The stand can be adapted to almost any transmission by changing the threaded plug at the top.

3. Rim Tool

By E. W. Hoyt

U. S. Mail Garage, Boston, Mass.

We have a tool which we have found very handy in installing tires on rimless dual wheels. In getting the inner lock ring off it frequently becomes sprung so that it will not lock into position when you put it back. With the use of the tool (and sometimes two of them) illustrated the ends of the inner lock rim can be held in position while the rest of the ring is tapped into its proper place.

4. Broken Glass Retriever

By Fishers' Service

Moorestown, N. J.

We have made up a tool out of a

bit of $\frac{1}{16}$ in. strap iron which serves us very well for removing bits of broken glass from cab doors. This has saved us many hours when we had a new window to install. The drawing shows how it is made. Tong portions must be flexible and close enough together to pick up glass.

5. Automatic Choke Control

By W. H. Riechel

State of California, Equipment Dept.

We had trouble with an automatic choke butterfly sticking in the housing and failing to release, making it necessary to remove the air cleaner and opening by hand. To overcome this we drilled a hole through the body and inserted a cotter pin, head inside. The hole and cotter pin was so positioned that it would stop the butterfly just before it closed tight and there was no more trouble.



Texas Fleetmen POOL

THE average fleet superintendent has an isolated existence in that he usually keeps pretty busy six or seven days a week keeping his fleet moving. It is a bit expensive for the manufacturers and distributors to reach the individual superintendents with educational literature, motion pictures, books and lectures which will help him increase fleet efficiency and lower operating cost.

And in many instances, the superintendent is working under a handicap because the fleet owner does not understand the problems of the superintendent. Many fleet owners yet think all superintendents are grease monkeys and that \$18.00 or \$20.00 a week is sufficient pay for such a man. These fleet owners have had no means of knowing \$50 or \$60 a week invested in the right kind of man, a superintendent who would keep up with the latest development in automotive engineering and maintenance, is good economy.

Here in Houston, Texas, a number of fleet superintendents decided we would do something to capitalize upon our collective knowledge, something to attract factory and other technicians, something to improve efficiency and safety in our fleets and lower cost, and lastly, something to improve our own conditions and positions in life. We organized the Automotive Fleet Maintenance Association of Texas in November, 1938, with a membership of 11 charter members.

ideas for better

By CHARLES N. TUNNELL

We founded our organization on this premise:

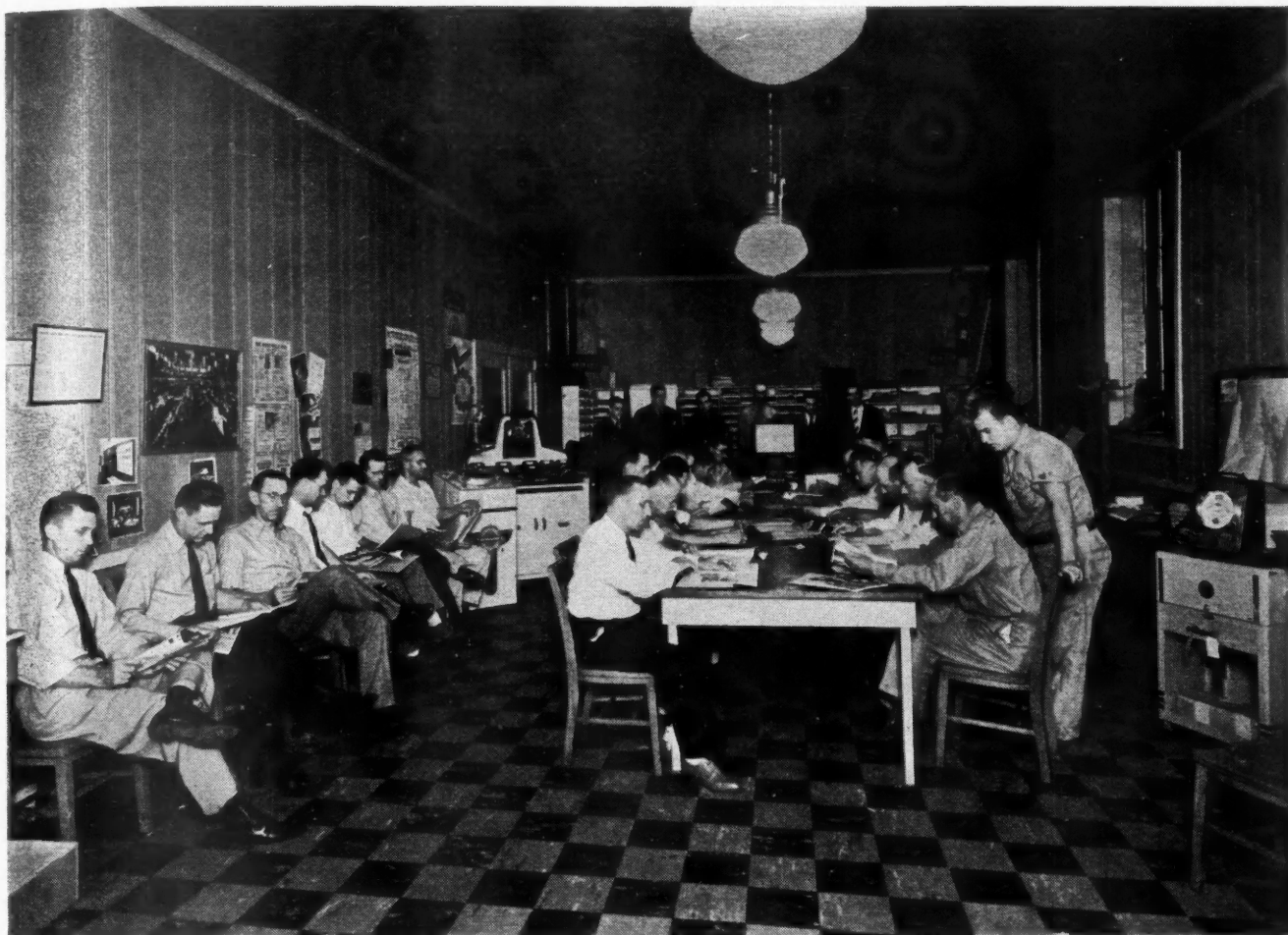
You have to put money in the bank before you can write a check. You have to make a deposit in knowledge and improved methods before expecting recognition or better conditions from fleet owners.

With 11 charter members, we went forward with our organization. We selected a name wide enough in scope to include as many district organizations in the state as desired, hoping that fleet superintendents in other Texas cities and other states would follow our example. From these members, we selected the following officers: President, C. A. Wright, Rice Hotel Laundry; vice-president, W. C.

Joyner, Houston Linen Service, which is a local unit of a national chain of linen supply laundries; secretary-treasurer, W. M. Love, the Borden Company.

We registered our association name with the state department and set up our constitution and by-laws. We plan to incorporate the association at a later date.

Eligibility in the association is determined by a standing committee of five members who investigate each applicant for membership. At least three members of this committee must make a favorable report and recommendation for election to membership; then actual election is made by a vote of the membership. Member-



Stripped down for action, association members make the most of monthly meetings in quarters loaned by local jobber

jobs

Houston shop men form own association to swap ideas and find they are making "positions" out of their "jobs"

ship is open to fleet superintendents and their head mechanics . . . that is, the head mechanic or the man in charge of the work of each fleet is eligible for membership providing his superintendent recommends his election. In this way, the association membership is confined to superintendents and their foreman or head man if this foreman is of the cooperative type and one that will be an asset to the association.

From the 11 charter members, we now have 55 active members. We have three honorary members who are leading tune-up and electrical service men in our city. These honorary members do not pay dues; they do not have a vote. But they at-

tend all meetings and give us every assistance during meetings. Then they are available all during the week for any superintendent that wants to call. One of these technicians is with an automotive dealer-distributor concern; the other two are with automotive electrical jobbing houses.

Our dues are \$2.00 initiation fee and then \$1.00 per month, payable quarterly and in advance. A registration book is passed around at each meeting and our stenographer keeps individual pages on each member, showing when he was present, or his reason for not being present, and the subject discussed at each particular meeting. In this way, the superintendent's boss can find out just what

meetings this maintenance man has attended, or reasons for not attending. Continued membership is contingent upon regular attendance and a sincere effort to take part and benefit from these meetings. Any lack of interest or continual absence means dismissal from the organization.

Meetings are held the first and third Tuesday of each month at 8:30 p.m. We limit lectures and demonstrations to one hour and thirty minutes so that we can hold an open discussion following the meeting.

No labor problems pertaining to unions, pro or con, no politics or other such topics are permitted. This

(TURN TO PAGE 67, PLEASE)



Left: Diamond T's new model 306SC carries a gross rating of 11,000 lb.

new CAB-FORWARD DIAMOND T's

Short wheelbase, low cab floor and driver comfort stressed in two models of 11,000 and 13,000-lb. gross

TWO new 1½-ton cab-forward models are announced by the Diamond T Motor Car Co., featuring a saving of nearly three feet in wheelbase on conventional models. There is very little increase in height and only two steps to the cab floor, as usual. Comfort and ease of handling are similar to the conventional models. The 60 inch steel cab is fitted with two large form-fitting individual seats, deep-cushioned and angled for the most restful driving position.

Model 306SC carries a gross rating of 11,000 lb. and a base chassis price of \$775. The Diamond T-Hercules

special 221 cu. in. CBQXC3 engine is standard equipment, with 10 in. clutch and 4-speed transmission. Maximum torque is 154 lb.-ft., and 69 hp. is developed at 3000 r.p.m.

Model 404SC has a deeper and heavier frame and the larger and more powerful CBJXE3 engine, of 245 cu. in. displacement, 170 lb.-ft. torque, and 76 hp. at 2800 r.p.m. Chassis price is \$885 and gross rating is 13,000 lb. Clutch is an 11 inch Borg-Warner, and the helical-gear, 4-speed Spicer 2341 transmission is standard.

Engines of both models have a one-

piece block of electric furnace chrome-molybdenum iron, full-depth cooling, Zollner 4-ring light alloy pistons and seven main bearings. All bearings are of precision-type and of heat-resistant cadmium-nickel. Crankshaft is fully counterbalanced and all journals are surface-hardened by the "Tocco" electric process.

Brakes are Lockheed hydraulic, with B-K vacuum booster optional at extra cost. Steering is Ross cam-and-lever, with roller bearing cam-follower. All springs are shackled with Diamond T compression-type rubber bushings which require no lubrication at any time. Hydraulic shock absorbers are standard on front end. Extra wide track allows full steering range.

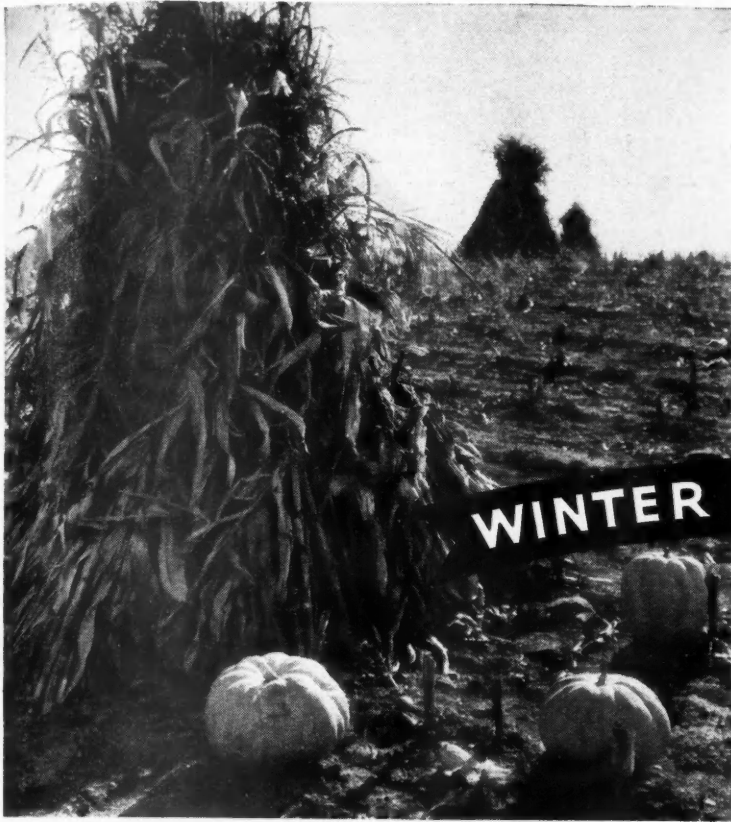
The steering column is adjustable for angle, while hand-brake is of the pistol-grip type, located at the left side of the cowl. A large cowl ventilator is provided and individual cranks control both sections of the V-windshield and both door windows. Cab doors are hinged in front.

The floor is "clean" and the driver enters or leaves through either door with ease. Gearshift control is conveniently placed, with the shifting tower between the seats, where it causes no interference.

Engine cover is low and heavily insulated with rock-wool, as is also the toeboard, so that engine heat is fully excluded. Cab is built of reinforced steel and is flexibly spring and rubber mounted to absorb vibration. Toolbox is conveniently placed under the right seat, storage battery under the left.

Engine cover is held in place by three spring fasteners—instantly removable. There is a removable inspection plate in the sheet metal on each side of the radiator, and the entire toeboard lifts out for major servicing.

Both trucks are built in a range of wheelbases to accommodate bodies up to 16 feet in length. The advantage of the cab-forward design is naturally greatest in city delivery and heavy traffic, but Model 404SC is also designed for general tractor-trailer service and inter-city hauling.



*"When the frost is on the punkin'
An' the fodder's in the shock—"*

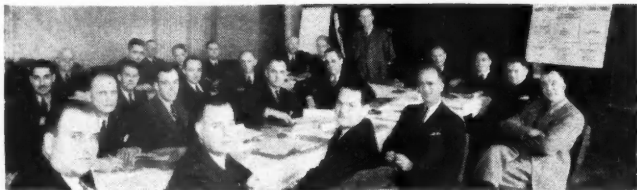
*Make money
betting on this*
**SURE
THING!**

and millions of
trucks and buses
should have full

power-brake reconditioning!

THEY'LL NEED:

- ✓ Vacuum lines cleaned, tested and renewed where necessary
- ✓ Vacuum cylinders cleaned and inspected
- ✓ Vacuum pistons cleaned and renewed
- ✓ Valves cleaned, inspected, tested, repaired or renewed.



Hundreds of experienced mechanics with sales and service organizations the world over, have been thoroughly factory-trained in intensive courses of Bendix instruction. These specialists know their stuff.



EVERY smart truck or bus operator knows his equipment needs going over in preparation for cold weather. But what he won't think of—unless his Bendix Service Shop reminds him—is that Power Braking Systems need winter conditioning too!

Bendix B-K Service Distributing organizations now have full, systematized chart-form information on every conceivable Bendix B-K Power Braking hookup. With it, fleet modernization is simple, sure and speedy. Factory-trained servicemen will handle the job. Everything about it will be right!

Now is the time to get this power-brake reconditioning program under way—only a few short weeks left until it's really cold and the fleets are busier and service problems tougher!

Write for details now!

BENDIX PRODUCTS DIVISION
OF BENDIX AVIATION CORPORATION
South Bend, Indiana

BENDIX



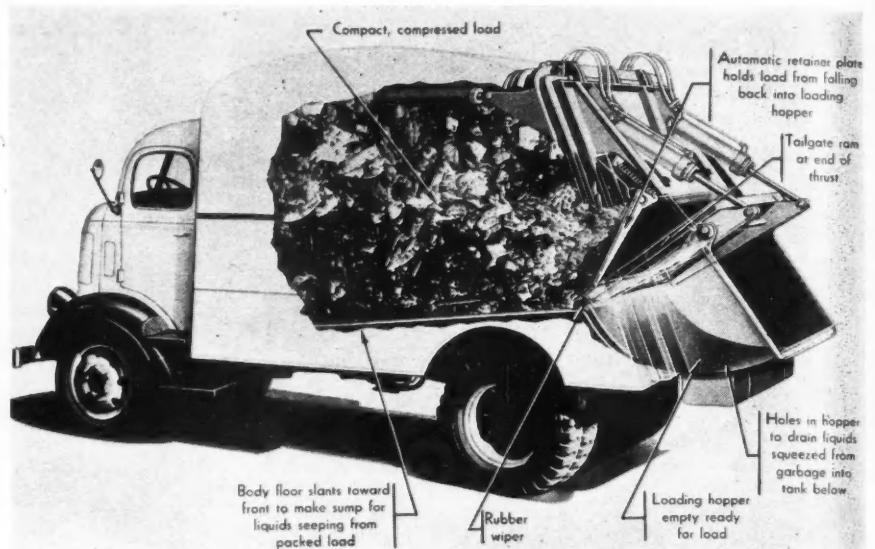
**CONTROLLED VACUUM
POWER BRAKING**

NEW GAR WOOD LOAD-PACKER

GAR WOOD Industries, Inc., has announced a new refuse body called the Gar Wood Load-Packer. The unit compresses all types of garbage, refuse and rubbish—including cartons, boxes, tree trimmings, and miscellaneous trash—into a compact full capacity load said to be many times greater by weight than the usual loose load.

A big loading hopper located close to the ground minimizes risk of injuries and simplifies loading. A door in the tailgate ram is swung up while hopper is being filled and at the same time an automatic retainer plate keeps garbage already packed from falling back into the loading hopper. The retainer plate releases and snaps back against the tailgate ram at the instant the lever operating the ram is thrown and the ram moves forward.

After loading hopper has been filled, the loading door is closed and becomes part of the tailgate ram. The valve operating lever at rear of body is then moved and the two hydraulic cylinders thrust the tailgate ram against the garbage in the loading



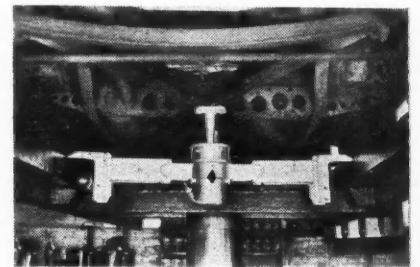
hopper, ramming it from the hopper and packing it into the body. This operation cleans out the hopper.

When garbage in the hopper is compressed into the body, water and other liquids are squeezed out, draining into a tank located directly below the hopper. This insures garbage burning more readily, thereby effecting economy at the incinerator. The elimination of excess liquids allows body to accommodate more garbage.

The Load-Packer operates while the truck is moving, thereby speeding up collection. The loading hopper, being all-enclosed, odors are confined and papers cannot blow away. There is no unsanitary trough or bucket on the outside to permit spillage. The load is dumped in the conventional manner.

Alemite Air Jack

An air-operated jack designed for use on all types of lifts or pits has been introduced by Alemite. With a capacity of 3000 lb. and a lift of 5 in., it may be used either to lift chassis weight from springs to aid lubrication or to jack wheels for service operations. Furnished in four types to meet all lift or pit specifications. For

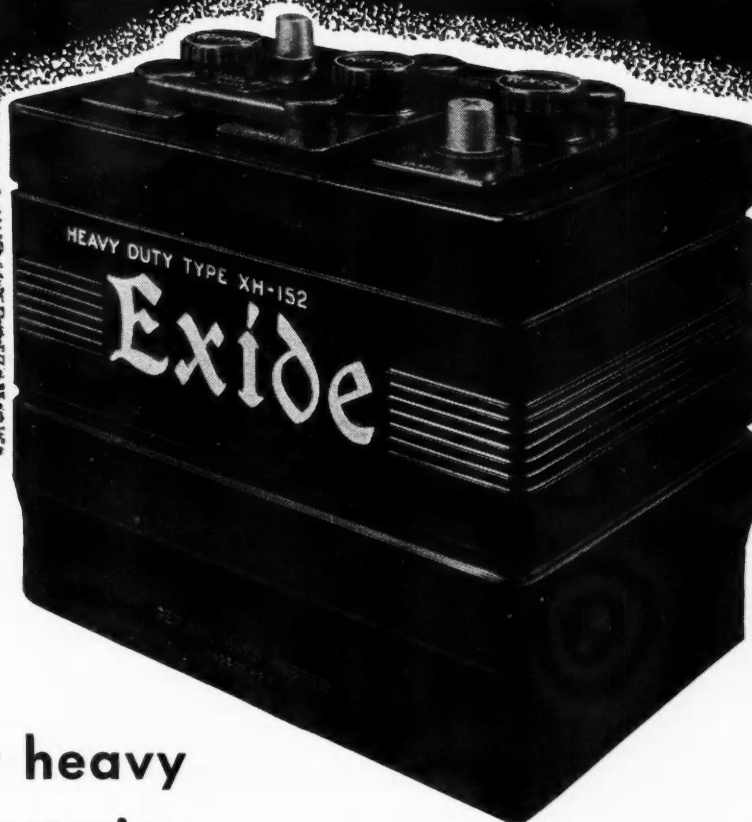


details, address Stewart-Warner Corp., Alemite Division, 1826 Diversey Parkway, Chicago. Refer "Pit Lift Air Jack."

New Truck Registrations by Makes by Months

	Auto-car	Brookway	Chevrolet	Diamond T	Dodge	Federal	Ford	G.M.C.	Hudson	Inter-nat'l	Mack	Plymouth	Reo	Sterling	Studebaker	White Indiana	Willlys	Misc.	Total
January 1939	143	127	13,615	378	4,002	85	10,188	2,384	47	4,709	482	507	168	25	169	348	135	203	37,715
January 1938	130	64	10,338	357	3,145	118	9,304	1,777	103	4,581	257	691	217	16	161	301	206	229	31,995
February 1939	134	98	12,007	308	3,821	79	9,224	2,218	44	4,284	398	510	159	29	143	275	97	274	34,102
February 1938	96	57	9,174	350	2,677	110	7,863	1,424	81	3,847	223	587	184	9	147	319	142	261	27,551
March 1939	150	168	16,565	392	4,852	122	11,886	2,772	39	5,507	483	679	175	17	190	373	148	365	45,083
March 1938	110	86	12,598	395	3,752	138	10,175	2,010	79	5,382	357	798	291	17	163	388	178	338	37,255
April 1939	149	139	16,386	515	4,688	137	11,631	3,170	53	5,617	547	1,014	106	24	172	421	141	291	45,201
April 1938	119	127	11,824	421	3,618	130	9,437	1,898	79	4,850	370	766	263	26	184	356	175	391	35,634
May 1939	184	177	15,899	427	5,185	173	11,706	3,215	44	5,359	666	1,118	78	45	196	442	166	301	45,381
May 1938	193	159	10,918	378	3,252	95	9,117	1,853	68	4,372	383	678	291	25	224	366	172	393	32,937
June 1939	162	177	14,049	408	4,442	123	10,606	2,740	47	5,105	588	889	53	25	209	446	185	228	40,482
June 1938	235	116	10,034	340	3,095	97	8,510	1,762	67	4,136	321	692	224	21	159	313	197	328	30,647
July 1939	300	170	15,432	436	4,562	116	12,514	2,872	43	5,744	541	946	31	28	229	379	133	271	44,747
July 1938	129	99	11,225	382	3,236	117	9,425	1,675	67	4,782	347	660	264	34	116	337	182	398	33,475
Seven Months 1939	1,222	1,056	104,315	2,867	31,619	850	77,973	19,444	317	36,421	3,709	5,874	771	193	1,309	2,689	962	1,982	293,573
Seven Months 1938	1,012	708	76,348	2,623	22,835	811	63,992	12,444	545	32,055	2,258	4,880	1,735	148	1,157	2,395	1,227	2,369	229,542
% Change Seven Mos.	+21	+49	+37	+9	+39	+5	+22	+56	-42	+14	+64	+20	-55	+30	+13	+12	-21	-16	+28

EXIDE SCORES AGAIN



New heavy duty Exide Truck Batteries average 25% longer life

THE continuous improvement that marks the entire history of Exide Batteries has made itself felt among fleet operators in this important way—*lower battery cost per operating mile.*

Now, Exide presents a new heavy duty truck battery—one that is engineered to give you an average of 25% longer battery life, with a still further reduction in battery cost per mile.

For years Exide research engineers have been busy developing a new and superior battery plate. They have now succeeded, and we are proud to offer the new XH-131, XH-152, XH-173, and XH-194 Exides as the answer to longer, more dependable, more trouble-free, more economical battery service in your trucks.

Why not look into these new heavy duty Exide Truck Batteries with their average of 25% longer life? They are sure to mean lower cost per operating mile in your fleet. See your Exide Wholesaler today, or write to us.

Exide has designed the new XH plate so that in heavy duty service there is no need for special retainers to prevent "shedding" (loss of active material) with the resultant loss of capacity and life. This new design lowers even further Exide's overall cost per mile.

Exide

HEAVY DUTY TRUCK BATTERIES

THE ELECTRIC STORAGE BATTERY COMPANY, Philadelphia

The World's Largest Manufacturers of Storage Batteries for Every Purpose

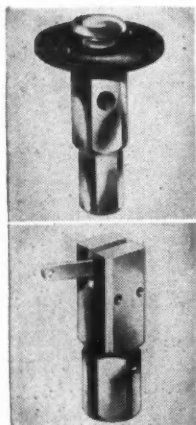
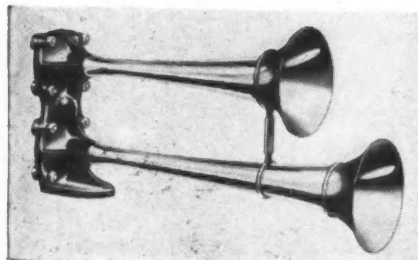
Exide Batteries of Canada, Limited, Toronto

SHOWCASE

of New Products

New "zephAIRtone" Air Horn

A new air horn to be known as the "zephAIRtone" has been announced by



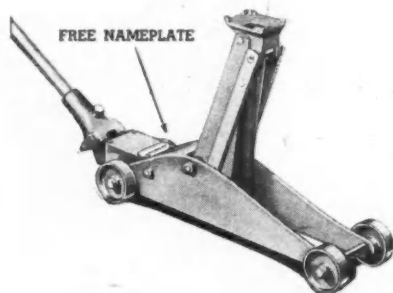
Bendix-Westinghouse Automotive Air Brake Co., Pittsburgh, Pa. It is stated that the new horn is more attractive, much less expensive and weighs only half as much as the old series "DD" which it replaces. The company also states that carrying power is directed as far as possible to the immediate front and

is unaffected by head wind.

In addition to a redesigned hand switch, an entirely new foot switch has been added as optional equipment. Both types are illustrated. Installation kits are available for both factory and field installations. Full details may be had from the makers.

Low-Priced Blackhawk Jack

Latest addition to Blackhawk's line of



hydraulic service jacks is the new model S-17, 1½-ton hydraulic curb service jack

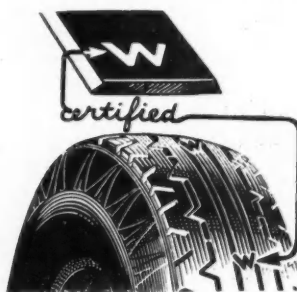
selling at \$19.25. Its total height is 18½ in., necessary to handle knee-action cars. It has a removable handle for convenient handling in side cars, service trucks, or storing. Extra wide wheels provide solid footing. Further details from Blackhawk Mfg. Co., Milwaukee, Wis.

AC Filter Fittings

A simplified line of packaged fittings for installing oil filters easily and quickly on automobiles and trucks has been introduced by the AC Spark Plug division of General Motors. Seven kits will service all passenger cars and only one kit contains necessary fittings to install an AC filter on any make of conventional truck. For cab-over-engine trucks, two conversion kits have been prepared.

"Certified Treads" for Recaps

The Webster Rubber Co., Warren, Ohio, sponsor of the Webster-izing Process for recapping truck tires, has developed a method of "Certifying" the tread rubber used on Webster-ized tires. The tread contains a



small red "W" which appears in the center of the non skid pattern of the tire. This mark certifies to the fleet operator that the tire has been genuinely Webster-ized and that Webster rubber has been used.

Removable Lift Sleeve

A new composition sleeve which greatly simplifies the removal of hydraulic lifts has been announced by the Rotary Lift Co., Memphis, Tenn. Made in three pieces, the sleeve surrounds the outer casing of the lift making it possible to lift out the entire mechanism without breaking the concrete floor. A new top jack flange is designed to carry the full load, eliminating need for a concrete mat at bottom of well. For full details, address the manufacturer.

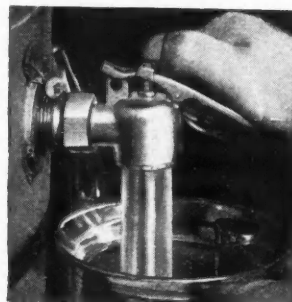
Goodrich Glasstex Battery

A new line of passenger car batteries with a guarantee of 27 months or 27,000 miles of service is announced by The B. F. Goodrich Co., Akron, Ohio. Fibre glass mats are used in the construction of the new "Glasstex" batteries which are equipped with either power-saving top cover or non-flood device.



Imperial Dripless Faucet

A new drum faucet said to be fast flowing and dripless has been developed by Imperial Brass Mfg. Co., 1234 W. Harrison



Street, Chicago. Identified as the Imperial Molygate, the device has a neoprene seat located at the extreme end of the nozzle minimizing drip. An extra large interior provides fast flowing of liquid. Full details may be secured from the makers.

K-D Heater Switches

A new line of illuminated heater switches featuring a wobble-proof bracket with clamping screw on the bottom is offered by K-D Lamp Co., Cincinnati, Ohio. Switches are available in both station and continuously-variable types and are furnished with plastic knobs.

New Goodyear YKL

A new YKL truck tire featuring rayon "Rayotwist" cord and a new tread has been announced by Goodyear Tire & Rubber Co., Akron, Ohio. Tread characteristics resemble the recently-announced "Hi-Miler" having diamond center traction and large lateral ribs. It is understood the new tire is the leader of five complete truck tire lines offered by Goodyear.

King Cam Angle Meter

A new "King" cam angle meter CA-2 has been developed by the Electric Heat Control Co., 9123 Inman Ave., Cleveland, Ohio. The device is designed to detect trouble in points or mechanism and is said not to vary more than one degree throughout the full range of speed and is controllable for varying voltages. (TURN TO PAGE 117, PLEASE)



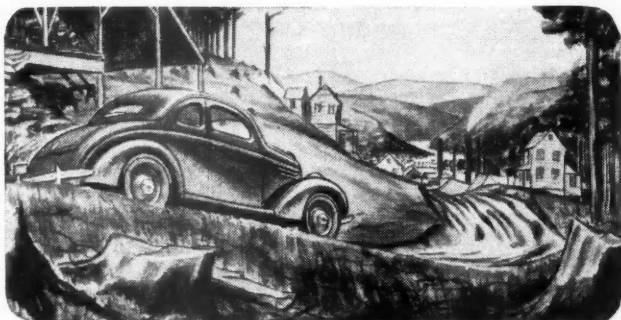


Case #249

The Case of the Crankcase Camel

A true story from the files on Gulfpride--
the motor oil that works wonders of lubrication

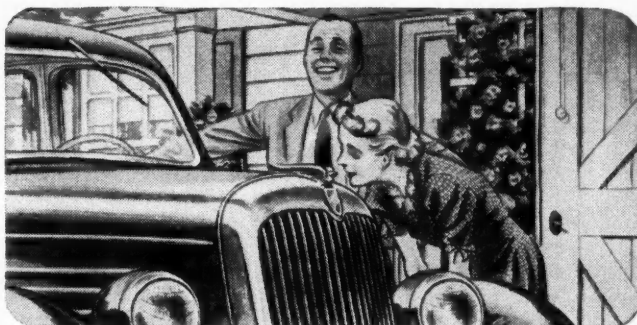
1 Big insurance contracts, like petroleum, are often discovered in unsuspected places. To nose them out, an Alexandria, Va., insurance man travelled some of the country's toughest roads. In his off-the-beaten-path driving, he gave his car more punishment in *one* year than the average motorist does in *three*!



2 He drove his car 25,000 difficult miles a year! And from the moment he bought it, he let nothing but Gulfpride Oil go into its crankcase. Previously, he had considered another Pennsylvania oil America's best, but switched to Gulfpride when a trial showed it head and shoulders above any other lubricant.



3 A methodical man, he kept accurate records of his oil consumption. At 61,000 miles, he reviewed his records . . . found that he had used exactly two quarts of oil between drains in 61,000 miles of driving—and he drains at the interval specified by the car maker. No wonder he calls his car "the crankcase camel"!



4 Equally amazing, not once in those 61,000 miles has a wrench been laid *on the motor*! Spark plugs, rings, bearings, and pistons are untouched. The motor still purrs like a kitten . . . with no indication of carbon. "Gulfpride," says this delighted motorist, "is the cheapest insurance I ever bought—or sold!"



Don't take anyone's word for what Gulfpride can do. You can prove it, yourself! Drain your present oil, refill with Gulfpride—and watch your oil consumption drop . . . your repair and carbon-cleaning bills go way down. For Gulfpride is the finest, purest fighter of friction you can put into a crankcase! *There is literally no other oil like it!*

Only Gulfpride is made of 100% Pure Pennsylvania, refined both by conventional methods and by Gulf's exclusive Alchlor process! Costs no more than other premium oils. Gulf Oil Corporation . . . Gulf Refining Company, Pittsburgh, Pa.

TUNE IN for Gulf's "Screen Guild Theater," featuring Hollywood's top stars. Every Sunday evening at 7:30 E.S.T. over Columbia Network.



Gulfpride Oil

100% Pure Pennsylvania, at Dealers' in sealed cans only

BUS AND FLEET OPERATORS: Gulfpride will save YOU MONEY—Try it in your fleet TODAY!

CCJ NEWSCAST

Bart Rawson Commentator

ATA Convention Plans

The program committee responsible for the Sixth Annual Convention of the American Trucking Associations, Inc., to be held at the Stevens Hotel, Chicago, Oct.

23, 24 and 25 has been working overtime. Early this month they came out of their huddle with the following line-up of principle speakers:

Clyde B. Aitchison, Interstate Commerce

Commissioner, and an expert on transportation law, who will speak on the economics of all forms of transportation. During his 21 years on the Commission he has twice been its chairman and is now chairman of the Finance Division.

Ray Tucker, Washington newspaperman, columnist, author and political forecaster, who will speak on what's going on in the nation's capital now and what may be expected in the months to come, and

James S. Arnold, vice-president of Kuhn, Loeb & Co., New York, who will deal with the future of motor and rail transportation. He is a specialist in transportation problems and their relation to banking.

A key-note speaker and others on the panel have not yet been announced. The afternoon of Monday, Oct. 23, will be devoted to the annual truck driver's contest in which winners of state rodeos will compete for trophies offered by ATA. The annual banquet will be held on Tuesday night, Oct. 24.

ICC on Intrastate Shipments

In a recent decision the Interstate Commerce Commission handed down its definite and pretty-much-expected answer to the question: "Are carriers engaged solely with intrastate movements of goods destined for interstate shipments subject to the regulations of the Motor Carrier Act?" That answer was: "Yes."

Commissioner Eastman concurred "reluctantly" with the decision, stating: "It is desirable that the Federal Government undertake no part of the regulation which can be done as well or better by these local authorities. To put it more concretely, it is undesirable that a little motor carrier whose small operations are confined within the bounds of a single state should have to look to Washington for his regulation, unless he plays a substantial part in interstate or foreign commerce and his operations are of some real national significance."

Nonetheless the Commissioner did concur and the decision stands.

Car-Over-Cab-Case to Supreme Court

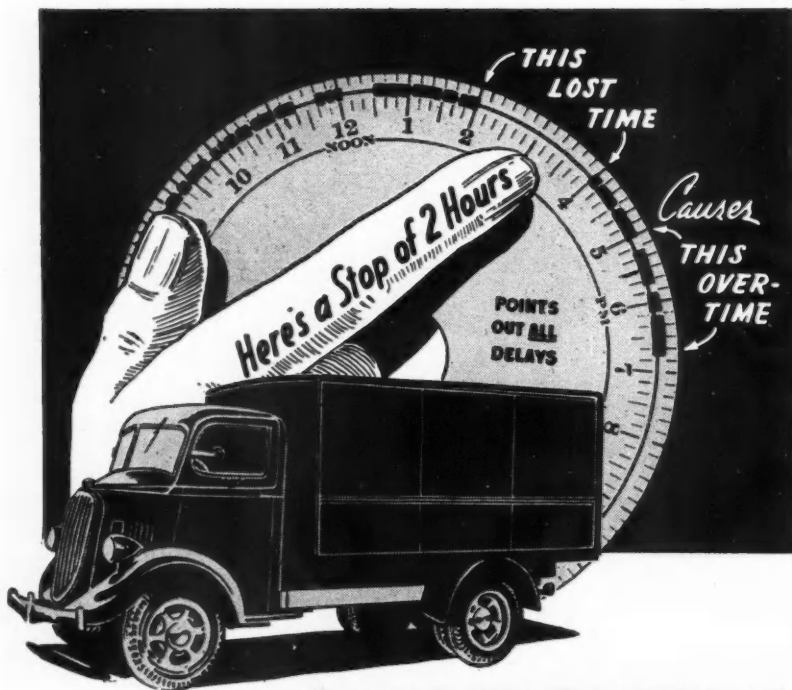
As reported in these columns last month, Pennsylvania's Supreme Court overruled a decision of the ICC and stated that whether car-over-cab operations were dangerous in other parts of the country or not, they were on Pennsylvania's hilly terrain. Sept. 1 was the deadline to get such vehicles off the highways.

But the worm turned suddenly early this
(TURN TO PAGE 42, PLEASE)

TRUCK PRODUCTION (United States and Canada)

	1939	1938	Per Cent Change
January . . .	62,509	58,062	+ 8.0
February . . .	61,247	51,464	+19.0
March . . .	77,097	52,106	+48.0
April . . .	68,063	47,818	+42.3
May . . .	63,759	41,575	+53.4
June . . .	66,946	41,857	+60.0
July . . .	62,487	38,336	+63.0
7 Months . . .	462,108	331,218	+39.8

COMMERCIAL CAR JOURNAL
OCTOBER, 1939



OVERTIME!

Is it a habit with your truck?

● One thing is certain—if your truck wastes an hour *during* the day, it will have to take an hour *after* closing time to get a day's work done. And that is what is happening with thousands of motor trucks.

If your truck is busy during the day and still has to work overtime, then pay your overtime cheerfully, and on the basis of the chart of the *Servis Recorder*. Don't have any more arguments about overtime. And don't have your trucks working after hours when they could finish everything *during* hours. The *Servis Recorder* will tell you on its chart the whole situation at a glance.

The *Servis Recorder*, by the way, is attached to any truck merely by a couple of ordinary screws or bolts. Over 100,000 trucks have been equipped already. Write for free Booklet: "Ten Ways of Getting More Work Out of Motor Trucks."

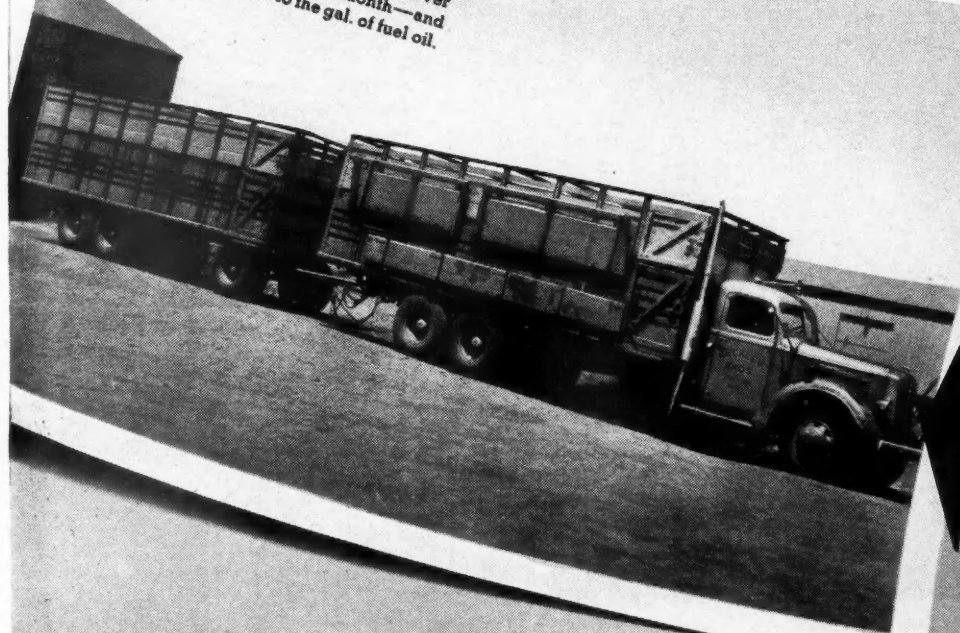


THE SERVICE RECORDER COMPANY
1422 EUCLID AVE. Branches in Principal Cities CLEVELAND, OHIO

The Servis Recorder
Tells Every Move Your Truck Makes

IF AT FIRST YOU *DO* SUCCEED *TRY TRY AGAIN*

Here's "No. 3"—sixty feet overall. Under the hood is a GM Diesel Engine, model 4-71, of 110 hp., which replaced a gasoline engine. It's averaging well over 300 miles a day—10,000 per month—and getting seven miles to the gal. of fuel oil.



... So he has
**THREE GM
Diesels now!**

MR. G. W. BECKLEY, of Stockton, California, is one of the largest livestock haulers of his region.

Last January he replaced the gasoline engine in one of his trucks with a GM Diesel.

He saw his gross payload shoot up to thirty tons, and his fuel costs come way down, as he turned out over seven thousand miles of tough work per month, averaging seven miles to the gallon of fuel oil.

So he put in another GM Diesel. Worked it even harder—over eight thousand miles per month, with the same top-notch record.

And now he has a third one

running—and ten thousand miles per month is the average of this latest addition.

Of course all this is but additional confirmation of the job the GM Diesel does *wherever* it goes into trucking. It's out-pulling, out-accelerating, and out-economizing gasoline engines. It's stepping up payloads, getting them there faster, and cutting service costs to the bone.

Designed on the General Motors 2-cycle principle, it packs more power to the pound, permitting higher payloads by eliminating excess dead weight. Equipped with a highly efficient Unit Injector

and Fuel Pump and with thorough Uniflow Blower Scavenging, it develops top efficiency per pound of weight.

Here, for your business, is MORE speed, MORE reliability, MORE pulling-power, with LOWER—much lower—fuel and service costs.

Write for the name and address of the nearest GM Diesel dealer. He'll show you what the change-over can mean for you—for one truck or a whole fleet.



DIESEL ENGINE DIVISION
General Motors Sales Corporation
Cleveland, Ohio

★ GENERAL MOTORS DIESEL ★

SEE THE GENERAL MOTORS DIESEL EXHIBITS AT THE NEW YORK AND SAN FRANCISCO FAIRS

COMMERCIAL CAR JOURNAL
OCTOBER, 1939

When writing to advertisers please mention Commercial Car Journal

NEWSCAST

(CONTINUED FROM PAGE 40)

month when representatives of the National Automobile Transporters Association called on United States Supreme Court Justice Owen J. Roberts, vacationing on his farm at Kimberton, Pa. Day after the visit, Justice Roberts, with full authority of the court, announced an injunction restraining state officials from enforcing the law and also that the case would be reviewed by the nation's highest tribunal. The injunction is expected to be in force until that time, probably three months hence.

Alabama Gross Raised to 30,000 Lb.

Subject of another hotly disputed debate was Alabama's 20,000 lb. gross weight law, long a barrier to profitable north-south hauling. End of last month both houses of the state settled on an increase to 30,000 lb. compromising between the old statute and the 40,000 lb. figure asked by trucking interests. Since Governor Dixon endorsed the latter figure it can be assumed that the bill will have received his signature by the time this issue comes off the press.

Council Files Private Truck Brief

Again referring to the September issue of COMMERCIAL CAR JOURNAL readers will

remember the detailed analysis of Examiner Snow's report to the ICC containing his findings and recommendations with regard to Federal regulation of private truck owners.

As was to be expected, the National Council of Private Motor Truck Owners filed its brief and exceptions with the ICC on Sept 25. Sufficient here to note that the brief was 17 pages long, carefully challenged the various phases of the hearings step by step and concluded:

"The motion to discontinue and dismiss should be granted. But if this is not done, the Commission should find that upon the entire record there is no need, within the meaning of the statute, for the establishment of Federal regulation to promote safety of operation of private carriers of property in interstate and foreign commerce; that in view of the progress which the states are shown to have made and to be making, the matter of the regulation of the private carrier to promote safety of operation should, for the present at least, be left to the states."

Chicago Auto Show Gets Trucks

Approximately 50,000 sq. ft. of floor space will be occupied by truck exhibits at the Chicago Automobile Show opening Nov. 4 in the International Amphitheater. Nine makes will be represented including Chevrolet, Diamond T, Dodge, Federal, Ford, Plymouth, Studebaker, White and Willys-Overland.

The show will run nine days this year as opposed to eight in the past and will include two Sundays when heavy "gates" are expected.

John Lyon Collyer, recently elected president of the B. F. Goodrich Rubber Co. He resigns as joint managing director of Dunlop Rubber Co., Ltd., of England.



Reo's Reorganization Near

Reorganization of the Reo Motor Car Co. appeared to be another step nearer to realization when details of the latest plan for putting the company back into production were outlined in the U.S. District Court in Detroit, Sept. 20, by Theodore I. Fry, trustee.

Predicated on a \$2,000,000 loan from the Reconstruction Finance Corp., the plan calls for the appointment of three voting trustees who would have complete control of the company during the period of the loan, which would not exceed 10 years. Trustees suggested to the court for its approval were John W. Miner, attorney and banker of Jackson, Mich.; Otto C. Seyferth, president of Western Michigan Steel and Foundry Co., Muskegon, Mich., and also a director of Reo, and George B. Judson, Detroit banker.

Col. Fred Glover, Reo general manager, told the court that the war in Europe was expected to help Reo sales prospects in South American markets and indicated that the company had also been asked to bid on trucks for the United States army.



ORDINARY CORD

LEE DOUBLE-LIFE CORD

It is just good operating to equip your fleet with LEE DeLuxe Tires made with LEE DOUBLE-LIFE CORD, and it is good business to remember that the engineers who conceived and developed this idea also know best how to apply it.

LEE DOUBLE-LIFE CORD construction is protected by U. S. Pat. No. Re. 20316 and Canadian Pat. No. 368136. These patents cover the use of low stretch, low gauge, high twist cord in pneumatic tires.

Even the substitute synthetic cords which were highly promoted and which, under initial laboratory tests showed high heat resistance, proved less effective when they had to combat actual road test conditions, notably moisture and "growth."

Your LEE dealer is ready to service your fleet.

Full particulars about LEE DOUBLE-LIFE CORD construction may be secured from your LEE dealer. Ask for "Facts about Lee of Conshohocken Tires—Made with Lee Double-Life Cord," or write us for booklet.

Copyright 1939, Lee Tire & Rubber Co.

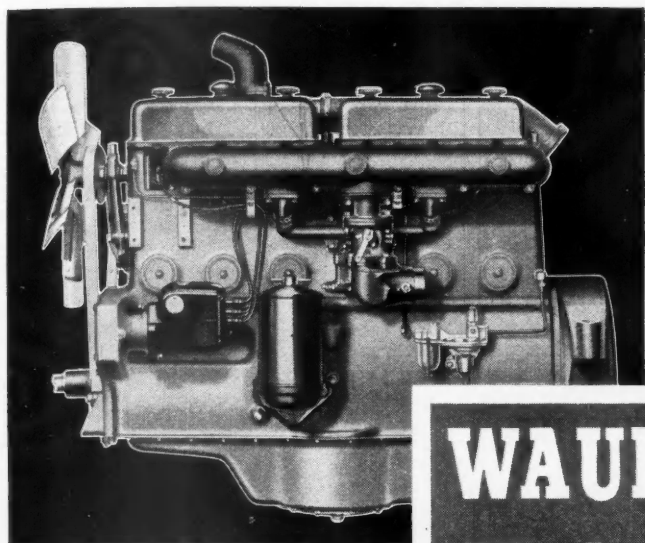
LEE of Conshohocken Tires

General Office: Conshohocken, Pa. Factories: Conshohocken, Pa., and Youngstown, Ohio

When writing to advertisers please mention Commercial Car Journal

COMMERCIAL CAR JOURNAL
OCTOBER, 1939

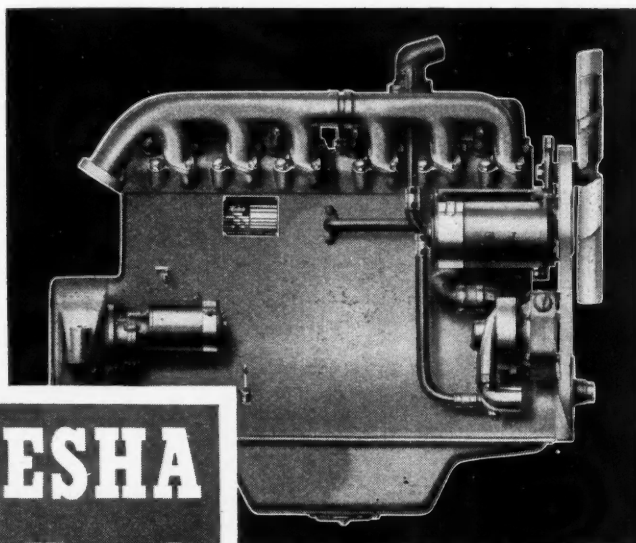
**More than 99 per cent of
your truck customers
USE GASOLINE ENGINES**



★ With 99.8 per cent of your truck and bus customers using a gasoline engine—it costs you real money to take care of the two-tenths of one per cent demand for an oil engine.

***With the new Waukesha
Multi-Fuel Poly-Cycle Engine
you are prepared for any fuel
situation—Gasoline, Butane,
or Fuel Oil.***

Right in your own shop you can convert it from a gasoline engine to a solid injection oil engine *without touching a single internal part*. It's just a question of fuel system accessories! Replace the gasoline or butane carburetor with a fuel injection system and you



WAUKESHA

Multi-Fuel Poly-Cycle ENGINE

**GASOLINE... BUTANE
PRODUCER GAS
FUEL OIL**

have an oil engine operating on the Hesselman low-pressure cycle, utilizing positively-timed spark ignition—with all the advantages of

Moderate first cost . . . light weight . . . easiest starting . . . lowest maintenance and repair costs . . . long life . . . and the ability to burn a wide range of fuel oils with the

greatest over-all economy.

Your engine inventory problem vanishes with the adoption of this universal Multi-Fuel Engine, and your oil engine demands can be met with a minimum of investment and time. Write for literature.

WAUKESHA MOTOR COMPANY, WAUKESHA, WIS.

NEW YORK	TULSA	LOS ANGELES
-----------------	--------------	--------------------



T. L. Preble



H. O. Mathews



Robert J. Collins



J. Verne Savage



Henry Jennings



Ellis W. Templin

SAE Honors Fleetmen

Of the 21 section chairmen elected by the various sections of the SAE to head the local sections for the 1939-40 season,

six of them belong to the Transportation and Maintenance Activity which is the Society's nomenclature for fleet operator.

T. L. Preble, supervisor automotive

transportation, Tidewater Associated Oil Co., heads the New York Section, while H. O. Mathews, automotive engineer, Public Utility Engineering and Service Corp., is chairman of the Chicago section. On the Pacific Coast Ellis W. Templin, automotive engineer, Los Angeles Dept. of Water and Power is chairman of the Southern California section and J. Verne Savage, supt. of shop and motor vehicle inspector, City of Portland (Ore.) Municipal shops. In Kansas City, Mo., Robert J. Collins, supt. of transportation, Kansas City Power and Light Co., is chairman of the local section and Henry Jennings, technical editor of *COMMERCIAL CAR JOURNAL*, is chairman of the Philadelphia section.



TAKE a look at the No. 111 Lock at right, and you'll understand why Hansen Body Hardware is noted for its unusual ruggedness and extreme simplicity.

The No. 85 Window Regulator shown has the famous Hansen Straight-up Lift for easily raising the heaviest windows—without binding or jamming.

The Leaf-Type Hinges illustrated are **unbreakable!** All-Steel, leaf-type construction. Hardened steel bearings for greater durability.

One-piece No. 60 Extension Lock again proves the simplicity of Hansen design. The No. 111-C Handle, with Locking Device, combines convenience and safety.

Make sure your body hardware is strong enough and heavy enough for commercial body service. Use Hansen as standard.

Ask for Catalog.

A.L. HANSEN MFG. CO.
5047 RAVENSWOOD AVE., CHICAGO, ILL.



SAE National Transportation Meeting

Tires, two-speed axles, multi-speed transmissions, automotive maintenance, engine wear, and selection of color for trucks and buses are headline topics at the National Transportation Meeting of the Society of Automotive Engineers which will bring utility, truck and bus operation and maintenance men of the nation together at the Hotel Coronado, St. Louis, Mo., Oct. 26 and 27. Authorities from coast to coast will present papers. The program is under the direction of the SAE Transportation & Maintenance, and Truck, Bus & Railcar Activities.

ICC Lowers Carolina Rates

Special reduced rates on textiles originating in the Carolinas and moving to Nashville, Tenn., have been allowed by the Interstate Commerce Commission in order to prevent diversion of traffic from railroads and truck companies to private carriers.

Competitors of the Carolina mills in Georgia, Alabama and Mississippi were denied a similar reduction on the grounds that dissimilar conditions surround the two movements.

Chevrolet Safety Program

Progress of Chevrolet's own fleet safety program was the subject of an intensive study when members of the National Institute for Traffic Training met in Ann Arbor recently. Facts revealed by the study showed (1) that Chevrolet operates about 1400 company cars; (2) that 277 accidents were reported among them in 1938, and (3) that this contrasts with 378 accidents in 1934 when only 1000 vehicles

(TURN TO PAGE 46, PLEASE)

TOLEDO AEROTYPE

**Gives You
Extra Miles.. Lower Costs**



● There's extra performance . . . extra mileage . . . in Toledo Aerotype valves, pistons and chrome plated pins. Under the severe demands placed upon heavy duty motors, Toledo Aerotype parts perform 3 to 4 times longer than ordinary parts. . . Toledo Aerotype means more miles—low cost miles—to you. See for yourself. . . Install a trial set of Toledo Aerotype valves, pistons and chrome plated pins today. Phone your Toledo jobber now or write us direct.

THE TOLEDO LINE IS COMPLETE

Valves and Valve Parts . . . Pistons: Aluminum, Cast Iron
 . . . Piston Pins—Chrome-Plated . . . Cylinder Sleeves . . .
 Cylinder Sleeve Assemblies . . . Engine Bearings . . . Water
 Pumps . . . Water Pump Parts . . . Tie Rod Ends . . . Chassis
 Bolts and Bushings . . . Shackles: Tryon, Silent "U" . . .
 Independent Front Wheel Suspension Parts



THE TOLEDO STEEL PRODUCTS COMPANY, TOLEDO, OHIO, U. S. A.

Warehouses: Atlanta • Boston • Chicago • Cincinnati • Cleveland • Dallas • Detroit • Jacksonville • Kansas City • Memphis
 Minneapolis • New York • Philadelphia • Pittsburgh • St. Louis • Wichita • Los Angeles • San Francisco • Portland • Seattle

TOLEDO

AEROTYPE VALVES • AEROTYPE PISTONS • CHROME-PLATED PINS

(CONTINUED FROM PAGE 44)

were under company supervision. Reduction in severity of accidents must have been even greater for cost of claims was reduced 85 per cent and the insurance rate dropped 64 per cent.

Fruehauf Flyer

A new light-weight commercial trailer, especially designed for use with light, short-wheelbase tractors, has been announced by Fruehauf Trailer Co. With a payload capacity of 12,000 lb. it is expected to fill an important need for city pick-up and delivery service. Full details will be published in the November Highway Transportation Show issue.

DeVilbiss Painting School

Fleetmen interested in brushing up on their spray-painting technique will do well to look into the one-week courses offered by the DeVilbiss Co., Toledo, beginning Oct. 9 and Nov. 6. These classes, conducted several times each year have been well attended in the past and it's best to make reservations promptly. Special board and room rates have been provided.

Carburetor Company Formed

A new organization to be known as Pyramid Equipment & Sales Co., has been formed to manufacture and sell carburetors, vaporizers and fuel regulators

for the conversion of gasoline engines for use with Butane-Propane gas. Equipment will also be available for use with natural gas in stationary engines. Carburetors will be furnished in SAE sizes up to 2 in. either for straight gas or combination gas and gasoline use.

Gilbert Woodhill is president and general manager of the new company; Karl Westlund is vice-president. Both have been associated with the Ensign Carburetor Co. for many years. A complete service organization covering the Pacific Coast, Mid-Continent and Southern Rocky Mountain areas is contemplated. Headquarters are established at 2305 E. Eighth St., Los Angeles.

Oil Filter Fellowship

Dr. Edward R. Weidlein, director, Mellon Institute, Pittsburgh, has announced the establishment of an industrial fellowship in that institution by the Fleming Mfg. Co., Providence, R. I. This fellowship will study the design, construction, and operation of oil filters.

Getting Personal

Important changes in the sales organization of the American Bosch Corp. have recently been announced. Lee C. Carlton, former Western sales manager, heads the newly-created Sales and Engineering Service division with headquarters in Springfield, Mass. Foster N. Perry, former Eastern sales manager, succeeds Mr. Carlton as Western manager while Frank Oberle of the Springfield office takes over the Eastern post. Maynard A. Fowler, former Pacific Coast district manager, heads a new Pacific Coast division with headquarters in San Francisco.

George E. Smith, who on Sept. 1 began duties as Eastern Manager of Automotive Sales for the Sherwin-Williams Co. He comes from the South Atlantic division and will headquarter in Philadelphia.



A. E. Hickey, former manager of the Philadelphia branch, has been made a vice-president of the Fruehauf Trailer Co. and will be in charge of the Eastern district. Ray Tudor succeeds Mr. Hickey at the Philadelphia branch, coming from Cleveland.

L. F. Shoemaker, newly appointed sales manager of Automotive and Industrial divisions, The Buda Co. He has been with the company since 1920.



Guaranteed Parts Co. of Seneca Falls, N. Y., has elected Marco Hecht as president of the company to succeed his father who died early this summer.



● Gee whiz! There's nothing like a nice, fresh survey. The trouble is that the only guy who crows about a survey is the one who comes out on top. So, if we don't tell you about this survey on floor jacks, you may never hear about it, and if you really like surveys, that would be too bad. So here goes:

An independent research organization asked a lot of nice, smart service managers a flock of questions on floor jacks, and one of the questions was, "What make of floor jack are you now using?" Out of the 202 S.S.M. who participated, the score was:

Walker	75	} (And there were fifteen others who had an uncle as a service manager.)
Guess Who	39	
Who Do You Think	39	
Me, Too	38	
X Marks the Spot	4	

Another enlightening question was what make of floor jack was best in their opinion and again the answer was:

Walker	67	} (And four others got one vote each.)
Guess Who	34	
Who Do You Think	21	
Me, Too	20	
X Marks the Spot	3	

Well, draw your own conclusions. These service managers are capable or they wouldn't hold their jobs. Good equipment is essential to them because it is more important to have their vehicles running than it is to "save" a couple of bucks. Walker is the overwhelming choice—past, present, and future.

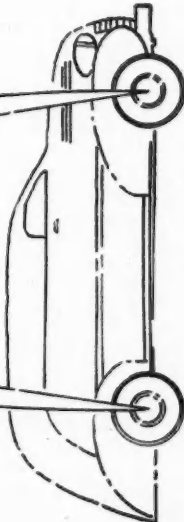
WALKER MANUFACTURING COMPANY, RACINE, WISCONSIN
Makers also of Walker Exhaust Silencers and Electric Lifts

COMMERCIAL CAR JOURNAL'S

TRUCK

SPECIFICATIONS

Label



Brought up to date in this issue from data
supplied by truck manufacturers

KEY TO ABBREVIATIONS AND REFERENCE MARKS

GENERAL

Make and Model—Only basic models are listed. Variations are available with most manufacturers.

Tonnage Rating—Where a spread of ratings is given the maximum ratings are shown. Where only one rating is given the minimum for extremely difficult conditions; the ranges between are for varying operating conditions.

Chassis Price—Chassis price quoted applies to standard wheelbase with standard tires. All prices are F.O.B. factory.

Gross Vehicle Weight—Is chassis weight shipped, plus body and equipment, plus maximum recommended weight. It is based on maximum recommended tire size, not on tires listed as standard.

Chassis Weight Stripped—Is weight of standard chassis with standard equipment, with crankcase and cooling system, and with standard tires. Excludes weight of body and equipment. Does not include weight of cab. Exceptions are noted.

Maximum Tire Size—Is furnished at extra cost, if the maximum differs from the standard tire size. Dual rear wheels are understocked except where otherwise noted.

Maximum Brake HP, at Given R.P.M.—Is actual dynamometer reading without accessories.

Gear Ratio Range in High—Ratios are given in high gear. Where no extra cost, exceptions are noted.

Tractors—Unless given the designation N (meaning not available as tractor), all standard models may be assumed to be available as tractors.

(C)—Converted Ford or Chevrolet model, identifiable by the engine make listed.

(D)—Diesel equipped.

(N)—Not available as tractor.

(T)—Specifically designed for tractor use only.

c.f.—Cab-Forward

c.o.e.—Cab-over-engine design.

e.b.s.—Engine-between-seat design

e.u.s.—Engine-under-seat design.

(1) Autocar—Larger service brake areas on rear axles are provided when tires of 24" base are supplied.

(2) Price does not include auxiliary axle, complete; area of brake lining and drum area do not include auxiliary rear axle.

(3) Models intended for dump or tractor service only.

(4) Chevrolet—Governor set not to exceed 45 M.P.H.

(5)—These models available with double drop bus frames.

(6) Ford—5.83 axle ratio also optional at no extra charge. 2-speed axle (ratios of 5.83 and 8.11) optional at extra cost. (7) International—Maximum tire size furnished is maximum capacity dual tires recommended for normal operating

conditions. AC-300 to AC-851 and AF-300 to AF-850 inclusive are also available for export only as coach chassis. Dual performance rear axles are available on AC-300 to AC-700 and AF-300 to AF-700 inclusive. Double reduction rear axles are available on AC-450 to AC-700 and AF-450 to AF-700 inclusive. GMC "126" engine is available on AC-850 and AF-850.

(5) International Harvester—For the express purpose of best fitting the truck to the individual job most International Trucks can be provided with optional engines, transmissions, axles, etc., and these units when so equipped are yet considered standard stock truck models. Chassis weights as listed involve popular wheelbases, recommended tire sizes and include weights of cabs.

(a) Mack—Weight in Chassis Weight column is shipping weight which includes weight of a chassis of medium standard wheelbase, cab, prevailing tire size, ready for the road.

Mack—For the express purpose of best fitting the truck to the individual job most Mack Trucks can be provided with optional engines, transmissions, axles, etc., and these units when so equipped are yet considered standard stock truck models.

(6) Ree—Also available with four speed transmission and bevel gear rear axle.

(7) Sterling—Available with Diesel.

(9) Willys—Advertised list price less Federal tax. Cab Pick-up \$530; Cab Stake \$545; Panel Delivery \$524. Prices, complete with shock absorbers and front and rear bumpers. Standard tires 3.50/16—4 ply; Panel Del. 6.00/16—4 ply; 6.00/16—6 ply—optional.

(10) Indiana—These models are for Government use and their chassis price depends upon quantity ordered.

(11) Diamond T—Weights given in Chassis Weight column are average chassis weights.

(12) Available—All models available in c.o.e. design.

(13) White—This is special model—price on application.

(14) Federal—263 cu. in. engine and 75 404 cu. in. and 428 cu. in. engines available on Model 40, 428 cu. in. engine available on Models 50 and 50H. Oversize or two-speed rear axles available on Models 15, 20, 40, 50, 50H, 70, 70H, 80, 80H, 80H. Double reduction rear axles available on Models 20, 25, 26, 26H, 40, 80, 85, 85H and 89H. Two or three-speed auxiliary transmissions available on all models. All above equipment furnished at extra cost.

(15) La France—Republic—Chassis weights include cab, water, oil, spare gallons of fuel.

(16) Marmon-Herrington—All Model trucks are equipped with 100 H.P. Chevrolet engines. Model FF is furnished with 105 H.P. Ford engines. Chassis weight increases 20 lbs., and list price increases \$25.

MAKES—ALL

A LaF—American La France.
B Bendix—Buda. Bl—Brown-Lipe.
C or Chev—Chevrolet. Cl or Cla—Clark.
Co—Covet. Con—Continental.
Cum—Cummings. Diesel.
F—Ford. Fu—Fuller.
Her—Hercules. L—Lockheed.
LW—Lockheed front, Own rear.
LY—Lycoming.
N—New York.
O or Opt—Optional.
Sal—Salsbury.
Shu—Shuler.
Spi—Spicer. Timken.
TO—Timken front, Own rear.
TW—Timken-Wisconsin.
WQ—Warner Gear.
Wt—Wisconsin Herrington.
Wt—Waukesha.
Wt—Waukesha.
W or Wis—Wisconsin.
WO—Wagner front, Own rear.
Ws—Westinghouse.

BRAKE DRUMS

Material

A—Cast alloy iron.
C—American Car Ferry.
E—Ermalle.
F—Furnace Iron.
N—Naked Iron.
P—Pressed steel.
S—Steel.
(Where a combination of any of the above is used, the first reference mark applies to the front and the second to the rear drum.)

FRAME

Type

I—"I" Beam.
C—Channel.
L—Channel tapered front and rear.
B—Channel reinforced with liner and capplate.
TL—Channel reinforced with plate.
D—Drop Center.
T—Tapered front.
X—X-Braced.

GOVERNOR STANDARD

Y—Yes. N—No.

REAR AXLE

Final Drive and Type

B—Bevel.
D—Dead.
H—Hypoid.
R—Double Reduction.
W—Ward.
X—Three-quarter floating.
Y—Ratios other than standard at extra cost.
(*) Only one ratio.

Drive and Torque

A—Radius Rods and Torque Arm.
H—Horsepins (springs).
T—Torque Arm.
U—Torque Tube.

WHEELS DRIVEN

2F—Forward unit of Rear Axle Group.
4B—Rear unit of Rear Axle Group.
4F—Front Axle and Forward unit of Rear Axle Group.
4FR—Front axle and rear unit of rear axle group.
6—All wheels.

BRAKES—SERVICE

Location

2—Two Wheels, rear only.
3/4—Three wheels, rear and one front wheel through driveshaft.
4—Four Wheels, front and rear.
4F—Four Wheels, rear only.
6—Six Wheels, front and rear.

Type

I—Internal. X—External.

Operation

A—Air.
D—Hydraulic and mechanical.
H—Hydraulic.
M—Mechanical.
V—Vacuum.

BRAKES—HAND

Location

C—Center of double propeller shaft.
2—Rear wheels.
4—Four wheels.
T—Transmission.
P—Propeller shaft.

Type

D—Twin-stop disk. X—External.
I—Internal.

Line Number	GENERAL (See Keynote)			TIRE SIZES				ENGINE DETAILS				TRANS-MISSION		REAR AXLE		FRONT AXLE	BRAKES				FRAME													
	MAKE AND MODEL	Tonnage Rating	Chassis Price	Standard Wheelbase	Max. Wt. B.	Gross Vehicle Weight	Chassis Wt.	(Stripped)	Standard Front and Rear	Dual rear S-single rear	Maximum Tire Size	Furnished	Model and Make	No. of Cylinders, Bore and Stroke	Displacement	Comp. Ratio	Torque lb. ft.	Max. Brake H.P. at R.P.M.	Number, Diameter and Length	Governor Standard	Model and Make	Clear and Type	Drive & Torque	Gear Ratio	Range in High	Model and Make	Location	Operation	Drum Area	Drum Material	Hand Location	Side Rail Dimensions	Type	
1	Autocar (D) C-10	1250	139	179	4820	6,500	200	18	6-34x44	6-34x44	8.25/20	Her JXB	6-34x44	260	16	5.8	184	79-2300	7-23x10	X	Cla 155F	Tim 54412	8F	H 6-16-7-4	8-5	Tim 31013	LAIHV	308	470	6	TD	63	8x2 1/2 x 10 1/2	T
2	Autocar (D) C-20	2500	139	179	4820	6,500	200	18	6-34x44	6-34x44	8.25/20	Her JXB	6-34x44	260	16	5.8	184	79-2300	7-23x10	X	Cla 155F	Tim 54412	8F	H 6-16-7-4	8-5	Tim 31013	LAIHV	308	470	6	TD	63	8x2 1/2 x 10 1/2	T
3	Autocar (D) C-30	3750	139	179	4820	6,500	200	18	6-34x44	6-34x44	8.25/20	Her JXB	6-34x44	260	16	5.8	184	79-2300	7-23x10	X	Cla 155F	Tim 54412	8F	H 6-16-7-4	8-5	Tim 31013	LAIHV	308	470	6	TD	63	8x2 1/2 x 10 1/2	T
4	Autocar (D) C-40	5000	139	179	4820	6,500	200	18	6-34x44	6-34x44	8.25/20	Her JXB	6-34x44	260	16	5.8	184	79-2300	7-23x10	X	Cla 155F	Tim 54412	8F	H 6-16-7-4	8-5	Tim 31013	LAIHV	308	470	6	TD	63	8x2 1/2 x 10 1/2	T
5	Autocar (D) C-50	6250	139	179	4820	6,500	200	18	6-34x44	6-34x44	8.25/20	Her JXB	6-34x44	260	16	5.8	184	79-2300	7-23x10	X	Cla 155F	Tim 54412	8F	H 6-16-7-4	8-5	Tim 31013	LAIHV	308	470	6	TD	63	8x2 1/2 x 10 1/2	T
6	Autocar (D) C-60	7500	139	179	4820	6,500	200	18	6-34x44	6-34x44	8.25/20	Her JXB	6-34x44	260	16	5.8	184	79-2300	7-23x10	X	Cla 155F	Tim 54412	8F	H 6-16-7-4	8-5	Tim 31013	LAIHV	308	470	6	TD	63	8x2 1/2 x 10 1/2	T
7	Autocar (D) C-70	8750	139	179	4820	6,500	200	18	6-34x44	6-34x44	8.25/20	Her JXB	6-34x44	260	16	5.8	184	79-2300	7-23x10	X	Cla 155F	Tim 54412	8F	H 6-16-7-4	8-5	Tim 31013	LAIHV	308	470	6	TD	63	8x2 1/2 x 10 1/2	T
8	Autocar (D) C-80	10000	139	179	4820	6,500	200	18	6-34x44	6-34x44	8.25/20	Her JXB	6-34x44	260	16	5.8	184	79-2300	7-23x10	X	Cla 155F	Tim 54412	8F	H 6-16-7-4	8-5	Tim 31013	LAIHV	308	470	6	TD	63	8x2 1/2 x 10 1/2	T
9	Autocar (D) C-90	11250	139	179	4820	6,500	200	18	6-34x44	6-34x44	8.25/20	Her JXB	6-34x44	260	16	5.8	184	79-2300	7-23x10	X	Cla 155F	Tim 54412	8F	H 6-16-7-4	8-5	Tim 31013	LAIHV	308	470	6	TD	63	8x2 1/2 x 10 1/2	T
10	Autocar (D) C-100	12500	139	179	4820	6,500	200	18	6-34x44	6-34x44	8.25/20	Her JXB	6-34x44	260	16	5.8	184	79-2300	7-23x10	X	Cla 155F	Tim 54412	8F	H 6-16-7-4	8-5	Tim 31013	LAIHV	308	470	6	TD	63	8x2 1/2 x 10 1/2	T
11	Autocar (D) C-110	13750	139	179	4820	6,500	200	18	6-34x44	6-34x44	8.25/20	Her JXB	6-34x44	260	16	5.8	184	79-2300	7-23x10	X	Cla 155F	Tim 54412	8F	H 6-16-7-4	8-5	Tim 31013	LAIHV	308	470	6	TD	63	8x2 1/2 x 10 1/2	T
12	Autocar (D) C-120	15000	139	179	4820	6,500	200	18	6-34x44	6-34x44	8.25/20	Her JXB	6-34x44	260	16	5.8	184	79-2300	7-23x10	X	Cla 155F	Tim 54412	8F	H 6-16-7-4	8-5	Tim 31013	LAIHV	308	470	6	TD	63	8x2 1/2 x 10 1/2	T
13	Autocar (D) C-130	16250	139	179	4820	6,500	200	18	6-34x44	6-34x44	8.25/20	Her JXB	6-34x44	260	16	5.8	184	79-2300	7-23x10	X	Cla 155F	Tim 54412	8F	H 6-16-7-4	8-5	Tim 31013	LAIHV	308	470	6	TD	63	8x2 1/2 x 10 1/2	T
14	Autocar (D) C-140	17500	139	179	4820	6,500	200	18	6-34x44	6-34x44	8.25/20	Her JXB	6-34x44	260	16	5.8	184	79-2300	7-23x10	X	Cla 155F	Tim 54412	8F	H 6-16-7-4	8-5	Tim 31013	LAIHV	308	470	6	TD	63	8x2 1/2 x 10 1/2	T
15	Autocar (D) C-150	18750	139	179	4820	6,500	200	18	6-34x44	6-34x44	8.25/20	Her JXB	6-34x44	260	16	5.8	184	79-2300	7-23x10	X	Cla 155F	Tim 54412	8F	H 6-16-7-4	8-5	Tim 31013	LAIHV	308	470	6	TD	63	8x2 1/2 x 10 1/2	T
16	Autocar (D) C-160	20000	139	179	4820	6,500	200	18	6-34x44	6-34x44	8.25/20	Her JXB	6-34x44	260	16	5.8	184	79-2300	7-23x10	X	Cla 155F	Tim 54412	8F	H 6-16-7-4	8-5	Tim 31013	LAIHV	308	470	6	TD	63	8x2 1/2 x 10 1/2	T
17	Autocar (D) C-170	21250	139	179	4820	6,500	200	18	6-34x44	6-34x44	8.25/20	Her JXB	6-34x44	260	16	5.8	184	79-2300	7-23x10	X	Cla 155F	Tim 54412	8F	H 6-16-7-4	8-5	Tim 31013	LAIHV	308	470	6	TD	63	8x2 1/2 x 10 1/2	T
18	Autocar (D) C-180	22500	139	179	4820	6,500	200	18	6-34x44	6-34x44	8.25/20	Her JXB	6-34x44	260	16	5.8	184	79-2300	7-23x10	X	Cla 155F	Tim 54412	8F	H 6-16-7-4	8-5	Tim 31013	LAIHV	308	470	6	TD	63	8x2 1/2 x 10 1/2	T
19	Autocar (D) C-190	23750	139	179	4820	6,500	200	18	6-34x44	6-34x44	8.25/20	Her JXB	6-34x44	260	16	5.8	184	79-2300	7-23x10	X	Cla 155F	Tim 54412	8F	H 6-16-7-4	8-5	Tim 31013	LAIHV	308	470	6	TD	63	8x2 1/2 x 10 1/2	T
20	Autocar (D) C-200	25000	139	179	4820	6,500	200	18	6-34x44	6-34x44	8.25/20	Her JXB	6-34x44	260	16	5.8	184	79-2300	7-23x10	X	Cla 155F	Tim 54412	8F	H 6-16-7-4	8-5	Tim 31013	LAIHV	308	470	6	TD	63	8x2 1/2 x 10 1/2	T
21	Autocar (D) C-210	26250	139	179	4820	6,500	200	18	6-34x44	6-34x44	8.25/20	Her JXB	6-34x44	260	16	5.8	184	79-2300	7-23x10	X	Cla 155F	Tim 54412	8F	H 6-16-7-4	8-5	Tim 31013	LAIHV	308	470	6	TD	63	8x2 1/2 x 10 1/2	T
22	Autocar (D) C-220	27500	139	179	4820	6,500	200	18	6-34x44	6-34x44	8.25/20	Her JXB	6-34x44	260	16	5.8	184	79-2300	7-23x10	X	Cla 155F	Tim 54412	8F	H 6-16-7-4	8-5	Tim 31013	LAIHV	308	470	6	TD	63	8x2 1/2 x 10 1/2	T
23	Autocar (D) C-230	28750	139	179	4820	6,500	200	18	6-34x44	6-34x44	8.25/20	Her JXB	6-34x44	260	16	5.8	184	79-2300	7-23x10	X	Cla 155F	Tim 54412	8F	H 6-16-7-4	8-5	Tim 31013	LAIHV	308	470	6	TD	63	8x2 1/2 x 10 1/2	T
24	Autocar (D) C-240	30000	139	179	4820	6,500	200	18	6-34x44	6-34x44	8.25/20	Her JXB	6-34x44	260	16	5.8	184	79-2300	7-23x10	X	Cla 155F	Tim 54412	8F	H 6-16-7-4	8-5	Tim 31013	LAIHV	308	470	6	TD	63	8x2 1/2 x 10 1/2	T
25	Autocar (D) C-250	31250	139	179	4820	6,500	200	18	6-34x44	6-34x44	8.25/20	Her JXB	6-34x44	260	16	5.8	184	79-2300	7-23x10	X	Cla 155F	Tim 54412	8F	H 6-16-7-4	8-5	Tim 31013	LAIHV	308	470	6	TD	63	8x2 1/2 x 10 1/2	T
26	Autocar (D) C-260	32500	139	179	4820	6,500	200	18	6-34x44	6-34x44	8.25/20	Her JXB	6-34x44	260	16	5.8	184	79-2300	7-23x10	X	Cla 155F	Tim 54412	8F	H 6-16-7-4	8-5	Tim 31013	LAIHV	308	470	6	TD	63	8x2 1/2 x 10 1/2	T
27	Autocar (D) C-270	33750	139	179	4820	6,500	200	18	6-34x44	6-34x44	8.25/20	Her JXB	6-34x44	260	16	5.8	184	79-2300	7-23x10	X	Cla 155F	Tim 54412	8F	H 6-16-7-4	8-5	Tim 31013	LAIHV	308	470	6	TD	63	8x2 1/2 x 10 1/2	T
28	Autocar (D) C-280	35000	139	179	4820	6,500	200	18	6-34x44	6-34x44	8.25/20	Her JXB	6-34x44	260	16	5.8	184	79-2300	7-23x10	X	Cla 155F	Tim 54412	8F	H 6-16-7-4	8-5	Tim 31013	LAIHV	308	470	6	TD	63	8x2 1/2 x 10 1/2	T
29	Autocar (D) C-290	36250	139	179	4820	6,500	200	18	6-34x44	6-34x44	8.25/20	Her JXB	6-34x44	260	16	5.8	184	79-2300	7-23x10	X	Cla 155F	Tim 54412	8F	H 6-16-7-4	8-5	Tim 31013	LAIHV	308	470	6	TD	63	8x2 1/2 x 10 1/2	T
30	Autocar (D) C-300	37500	139	179	4820	6,500	200	18	6-34x44	6-34x44	8.25/20	Her JXB	6-34x44	260	16	5.8	184	79-2300	7-23x10	X	Cla 155F	Tim 54412	8F	H 6-16-7-4	8-5	Tim 31013	LAIHV	308	470	6	TD	63	8x2 1/2 x 10 1/2	T
31	Autocar (D) C-310	38750	139	179	4820	6,500	200	18	6-34x44	6-34x44	8.25/20	Her JXB	6-34x44	260	16	5.8	184	79-2300	7-23x10	X	Cla 155F	Tim 54412	8F	H 6-16-7-4	8-5	Tim 31013	LAIHV	308	470	6	TD	63	8x2 1/2 x 10 1/2	T
32	Autocar (D) C-320	40000	139	179	4820	6,500	200	18	6-34x44	6-34x44	8.25/20	Her JXB	6-34x44	260	16	5.8	184	79-2300	7-23x10	X	Cla 155F	Tim 54412	8F	H 6-16-7-4	8-5	Tim 31013	LAIHV	308	470	6	TD	63	8x2 1/2 x 10 1/2	T
33	Autocar (D) C-330	41250	139	179	4820	6,500	200	18	6-34x44	6-34x44	8.25/20	Her JXB	6-34x44	260	16	5.8	184	79-2300	7-23x10	X	Cla 155F	Tim 54412	8F	H 6-16-7-4	8-5	Tim 31013	LAIHV	308	470	6	TD	63	8x2 1/2 x 10 1/2	T
34	Autocar (D) C-340	42500	139	179	4820	6,500	200	18	6-34x44	6-34x44	8.25/20	Her JXB	6-34x44	260	16	5.8	184	79-2300	7-23x10	X	Cla 155F	Tim 54412	8F	H 6-16-7-4	8-5	Tim 31013	LAIHV	308	470	6	TD	63	8x2 1/2 x 10 1/2	T
35	Autocar (D) C-350	43750	139	179	4820	6,500	200	18	6-34x44	6-34x44	8.25/20	Her JXB	6-34x44	260	16	5.8	184	79-2300	7-23x10	X	Cla 155F	Tim 54412	8F	H 6-16-7-4	8-5	Tim 31013	LAIHV	308	470	6	TD	63	8x2 1/2 x 10 1/2	T
36	Autocar (D) C-360	45000	139	179</																														

Delivered at Factory Price. Includes all Federal taxes but does not include state and/or local taxes. (x) Gross veh. weight, 14,000 lb. when truck is equipped with two-speed rear axle and special tire equipment available at extra cost. (e) Gross veh. weight, 14,000 lb. when truck is equipped with two-speed rear axle and special tire equipment available at extra cost. (e) Gross veh. weight, 14,000 lb. when truck is equipped with two-speed rear axle and special tire equipment available at extra cost.

Model	Price	Weight	Capacity	Engine	Transmission	Drive	Options	Notes
800	740	155	155	155	155	155	155	155
801	740	155	155	155	155	155	155	155
802	740	155	155	155	155	155	155	155
803	740	155	155	155	155	155	155	155
804	740	155	155	155	155	155	155	155
805	740	155	155	155	155	155	155	155
806	740	155	155	155	155	155	155	155
807	740	155	155	155	155	155	155	155
808	740	155	155	155	155	155	155	155
809	740	155	155	155	155	155	155	155
810	740	155	155	155	155	155	155	155
811	740	155	155	155	155	155	155	155
812	740	155	155	155	155	155	155	155
813	740	155	155	155	155	155	155	155
814	740	155	155	155	155	155	155	155
815	740	155	155	155	155	155	155	155
816	740	155	155	155	155	155	155	155
817	740	155	155	155	155	155	155	155
818	740	155	155	155	155	155	155	155
819	740	155	155	155	155	155	155	155
820	740	155	155	155	155	155	155	155
821	740	155	155	155	155	155	155	155
822	740	155	155	155	155	155	155	155
823	740	155	155	155	155	155	155	155
824	740	155	155	155	155	155	155	155
825	740	155	155	155	155	155	155	155
826	740	155	155	155	155	155	155	155
827	740	155	155	155	155	155	155	155
828	740	155	155	155	155	155	155	155
829	740	155	155	155	155	155	155	155
830	740	155	155	155	155	155	155	155
831	740	155	155	155	155	155	155	155
832	740	155	155	155	155	155	155	155
833	740	155	155	155	155	155	155	155
834	740	155	155	155	155	155	155	155
835	740	155	155	155	155	155	155	155
836	740	155	155	155	155	155	155	155
837	740	155	155	155	155	155	155	155
838	740	155	155	155	155	155	155	155
839	740	155	155	155	155	155	155	155
840	740	155	155	155	155	155	155	155
841	740	155	155	155	155	155	155	155
842	740	155	155	155	155	155	155	155
843	740	155	155	155	155	155	155	155
844	740	155	155	155	155	155	155	155
845	740	155	155	155	155	155	155	155
846	740	155	155	155	155	155	155	155
847	740	155	155	155	155	155	155	155
848	740	155	155	155	155	155	155	155
849	740	155	155	155	155	155	155	155
850	740	155	155	155	155	155	155	155
851	740	155	155	155	155	155	155	155
852	740	155	155	155	155	155	155	155
853	740	155	155	155	155	155	155	155
854	740	155	155	155	155	155	155	155
855	740	155	155	155	155	155	155	155
856	740	155	155	155	155	155	155	155
857	740	155	155	155	155	155	155	155
858	740	155	155	155	155	155	155	155
859	740	155	155	155	155	155	155	155
860	740	155	155	155	155	155	155	155
861	740	155	155	155	155	155	155	155
862	740	155	155	155	155	155	155	155
863	740	155	155	155	155	155	155	155
864	740	155	155	155	155	155	155	155
865	740	155	155	155	155	155	155	155
866	740	155	155	155	155	155	155	155
867	740	155	155	155	155	155	155	155
868	740	155	155	155	155	155	155	155
869	740	155	155	155	155	155	155	155
870	740	155	155	155	155	155	155	155
871	740	155	155	155	155	155	155	155
872	740	155	155	155	155	155	155	155
873	740	155	155	155	155	155	155	155
874	740	155	155	155	155	155	155	155
875	740	155	155	155	155	155	155	155
876	740	155	155	155	155	155	155	155
877	740	155	155	155	155	155	155	155
878	740	155	155	155	155	155	155	155
879	740	155	155	155	155	155	155	155
880	740	155	155	155	155	155	155	155
881	740	155	155	155	155	155	155	155
882	740	155	155	155	155	155	155	155
883	740	155	155	155	155	155	155	155
884	740	155	155	155	155	155	155	155
885	740	155	155	155	155	155	155	155
886	740	155	155	155	155	155	155	155
887	740	155	155	155	155	155	155	155
888	740	155	155	155	155	155	155	155
889	740	155	155	155	155	155	155	155
890	740	155	155	155	155	155	155	155
891	740	155	155	155	155	155	155	155
892	740	155	155	155	155	155	155	155
893	740	155	155	155	155	155	155	155
894	740	155	155	155	155	155	155	155
895	740	155	155	155	155	155	155	155
896	740	155	155	155	155	155	155	155
897	740	155	155	155	155	155	155	155
898	740	155	155	155	155	155	155	155
899	740	155	155	155	155	155	155	155
900	740	155	155	155	155	155	155	155

81
82
83
84
85
86
87
88
89
90
91
92
93
94
95
96
97
98
99
100
101
102
103
104
105
106
107
108
109
110
111
112
113
114
115
116
117
118
119
120
121
122
123
124
125
126
127
128
129
130
131
132
133
134
135
136
137
138
139
140
141
142
143
144
145
146
147
148
149
150
151
152
153
154
155
156
157
158
159
160
161
162
163
164
165
166
167
168
169
170
171
172
173
174
175
176
177
178
179
180
181
182

Line Number	MAKE AND MODEL	GENERAL (See Keynote)				TIRE SIZES				ENGINE DETAILS				TRANSMISSION		REAR AXLE		FRONT AXLE		BRAKES				FRAME										
		Chassis Price	Standard Wheelbase	Gross Weight	Max. Wt. B.	Chassis Wt.	Standard	Front and Rear	Maximum Tire Size	Make and Model	No. of Cylinders	Stroke	Displacement	Comp. Ratio	H.P. at R.P.M.	Number, Diameter and Length	Governor Standard	Make and Model	Forward Spd's	Make and Model	Clear and Type	Drive & Torque	Gear Ratio	Range in High	Make and Model	Location	Operate'n	Limiting Area	Drum	Drum Material	Hand Location	Side Rail Dimensions	Type	
1	Fargo. (E) FXH-1	494	116 116	4550			6.00/168	6.00/168	6.00/168	Owa	6	3 1/2	201	6.7	148	4	35	XXXXXX	NP 36700	3	Owa	Hy	3.70-4.78	3.90-4.78	3.90-4.78	Owa	O4IH	148	251	C	TX	40H	6 1/2 x 3 1/2	C
2	Fargo. (E) FXH-2	534	120 133	5300			7.00/168	7.00/168	7.00/168	Owa	6	3 1/2	217	6.5	158	4	35	XXXXXX	NP 36710	3	Owa	Hy	3.90-4.78	3.90-4.78	3.90-4.78	Owa	O4IH	190	310	C	TX	44H	6 1/2 x 3 1/2	C
3	Fargo. (E) FXH-3	534	120 133	5300			7.00/168	7.00/168	7.00/168	Owa	6	3 1/2	217	6.5	158	4	35	XXXXXX	NP 36710	3	Owa	Hy	3.90-4.78	3.90-4.78	3.90-4.78	Owa	O4IH	190	310	C	TX	44H	6 1/2 x 3 1/2	C
4	Fargo. (E) FXH-4	534	120 133	5300			7.00/168	7.00/168	7.00/168	Owa	6	3 1/2	217	6.5	158	4	35	XXXXXX	NP 36710	3	Owa	Hy	3.90-4.78	3.90-4.78	3.90-4.78	Owa	O4IH	190	310	C	TX	44H	6 1/2 x 3 1/2	C
5	Fargo. (E) FXH-5	534	120 133	5300			7.00/168	7.00/168	7.00/168	Owa	6	3 1/2	217	6.5	158	4	35	XXXXXX	NP 36710	3	Owa	Hy	3.90-4.78	3.90-4.78	3.90-4.78	Owa	O4IH	190	310	C	TX	44H	6 1/2 x 3 1/2	C
6	Fargo. (E) FXH-6	534	120 133	5300			7.00/168	7.00/168	7.00/168	Owa	6	3 1/2	217	6.5	158	4	35	XXXXXX	NP 36710	3	Owa	Hy	3.90-4.78	3.90-4.78	3.90-4.78	Owa	O4IH	190	310	C	TX	44H	6 1/2 x 3 1/2	C
7	Fargo. (E) FXH-7	534	120 133	5300			7.00/168	7.00/168	7.00/168	Owa	6	3 1/2	217	6.5	158	4	35	XXXXXX	NP 36710	3	Owa	Hy	3.90-4.78	3.90-4.78	3.90-4.78	Owa	O4IH	190	310	C	TX	44H	6 1/2 x 3 1/2	C
8	Fargo. (E) FXH-8	534	120 133	5300			7.00/168	7.00/168	7.00/168	Owa	6	3 1/2	217	6.5	158	4	35	XXXXXX	NP 36710	3	Owa	Hy	3.90-4.78	3.90-4.78	3.90-4.78	Owa	O4IH	190	310	C	TX	44H	6 1/2 x 3 1/2	C
9	Fargo. (E) FXH-9	534	120 133	5300			7.00/168	7.00/168	7.00/168	Owa	6	3 1/2	217	6.5	158	4	35	XXXXXX	NP 36710	3	Owa	Hy	3.90-4.78	3.90-4.78	3.90-4.78	Owa	O4IH	190	310	C	TX	44H	6 1/2 x 3 1/2	C
10	Fargo. (E) FXH-10	534	120 133	5300			7.00/168	7.00/168	7.00/168	Owa	6	3 1/2	217	6.5	158	4	35	XXXXXX	NP 36710	3	Owa	Hy	3.90-4.78	3.90-4.78	3.90-4.78	Owa	O4IH	190	310	C	TX	44H	6 1/2 x 3 1/2	C
11	Fargo. (E) FXH-11	534	120 133	5300			7.00/168	7.00/168	7.00/168	Owa	6	3 1/2	217	6.5	158	4	35	XXXXXX	NP 36710	3	Owa	Hy	3.90-4.78	3.90-4.78	3.90-4.78	Owa	O4IH	190	310	C	TX	44H	6 1/2 x 3 1/2	C
12	Fargo. (E) FXH-12	534	120 133	5300			7.00/168	7.00/168	7.00/168	Owa	6	3 1/2	217	6.5	158	4	35	XXXXXX	NP 36710	3	Owa	Hy	3.90-4.78	3.90-4.78	3.90-4.78	Owa	O4IH	190	310	C	TX	44H	6 1/2 x 3 1/2	C
13	Fargo. (E) FXH-13	534	120 133	5300			7.00/168	7.00/168	7.00/168	Owa	6	3 1/2	217	6.5	158	4	35	XXXXXX	NP 36710	3	Owa	Hy	3.90-4.78	3.90-4.78	3.90-4.78	Owa	O4IH	190	310	C	TX	44H	6 1/2 x 3 1/2	C
14	Fargo. (E) FXH-14	534	120 133	5300			7.00/168	7.00/168	7.00/168	Owa	6	3 1/2	217	6.5	158	4	35	XXXXXX	NP 36710	3	Owa	Hy	3.90-4.78	3.90-4.78	3.90-4.78	Owa	O4IH	190	310	C	TX	44H	6 1/2 x 3 1/2	C
15	Federal. (E) FGZ-6	2468	133 220	15000			7.00/200	7.00/200	7.00/200	Her DJXC	6	3 1/2	298	6.1	178	4	35	XXXXXX	NP 36700	3	Owa	Hy	3.90-4.78	3.90-4.78	3.90-4.78	Owa	O4IH	321	502	A	TX	60H	8 1/2 x 3 1/2	C
16	Federal. (E) FGZ-7	2468	133 220	15000			7.00/200	7.00/200	7.00/200	Her DJXC	6	3 1/2	298	6.1	178	4	35	XXXXXX	NP 36700	3	Owa	Hy	3.90-4.78	3.90-4.78	3.90-4.78	Owa	O4IH	321	502	A	TX	60H	8 1/2 x 3 1/2	C
17	Federal. (E) FGZ-8	2468	133 220	15000			7.00/200	7.00/200	7.00/200	Her DJXC	6	3 1/2	298	6.1	178	4	35	XXXXXX	NP 36700	3	Owa	Hy	3.90-4.78	3.90-4.78	3.90-4.78	Owa	O4IH	321	502	A	TX	60H	8 1/2 x 3 1/2	C
18	Federal. (E) FGZ-9	2468	133 220	15000			7.00/200	7.00/200	7.00/200	Her DJXC	6	3 1/2	298	6.1	178	4	35	XXXXXX	NP 36700	3	Owa	Hy	3.90-4.78	3.90-4.78	3.90-4.78	Owa	O4IH	321	502	A	TX	60H	8 1/2 x 3 1/2	C
19	Federal. (E) FGZ-10	2468	133 220	15000			7.00/200	7.00/200	7.00/200	Her DJXC	6	3 1/2	298	6.1	178	4	35	XXXXXX	NP 36700	3	Owa	Hy	3.90-4.78	3.90-4.78	3.90-4.78	Owa	O4IH	321	502	A	TX	60H	8 1/2 x 3 1/2	C
20	Federal. (E) FGZ-11	2468	133 220	15000			7.00/200	7.00/200	7.00/200	Her DJXC	6	3 1/2	298	6.1	178	4	35	XXXXXX	NP 36700	3	Owa	Hy	3.90-4.78	3.90-4.78	3.90-4.78	Owa	O4IH	321	502	A	TX	60H	8 1/2 x 3 1/2	C
21	Federal. (E) FGZ-12	2468	133 220	15000			7.00/200	7.00/200	7.00/200	Her DJXC	6	3 1/2	298	6.1	178	4	35	XXXXXX	NP 36700	3	Owa	Hy	3.90-4.78	3.90-4.78	3.90-4.78	Owa	O4IH	321	502	A	TX	60H	8 1/2 x 3 1/2	C
22	Federal. (E) FGZ-13	2468	133 220	15000			7.00/200	7.00/200	7.00/200	Her DJXC	6	3 1/2	298	6.1	178	4	35	XXXXXX	NP 36700	3	Owa	Hy	3.90-4.78	3.90-4.78	3.90-4.78	Owa	O4IH	321	502	A	TX	60H	8 1/2 x 3 1/2	C
23	Federal. (E) FGZ-14	2468	133 220	15000			7.00/200	7.00/200	7.00/200	Her DJXC	6	3 1/2	298	6.1	178	4	35	XXXXXX	NP 36700	3	Owa	Hy	3.90-4.78	3.90-4.78	3.90-4.78	Owa	O4IH	321	502	A	TX	60H	8 1/2 x 3 1/2	C
24	Federal. (E) FGZ-15	2468	133 220	15000			7.00/200	7.00/200	7.00/200	Her DJXC	6	3 1/2	298	6.1	178	4	35	XXXXXX	NP 36700	3	Owa	Hy	3.90-4.78	3.90-4.78	3.90-4.78	Owa	O4IH	321	502	A	TX	60H	8 1/2 x 3 1/2	C
25	Federal. (E) FGZ-16	2468	133 220	15000			7.00/200	7.00/200	7.00/200	Her DJXC	6	3 1/2	298	6.1	178	4	35	XXXXXX	NP 36700	3	Owa	Hy	3.90-4.78	3.90-4.78	3.90-4.78	Owa	O4IH	321	502	A	TX	60H	8 1/2 x 3 1/2	C
26	Federal. (E) FGZ-17	2468	133 220	15000			7.00/200	7.00/200	7.00/200	Her DJXC	6	3 1/2	298	6.1	178	4	35	XXXXXX	NP 36700	3	Owa	Hy	3.90-4.78	3.90-4.78	3.90-4.78	Owa	O4IH	321	502	A	TX	60H	8 1/2 x 3 1/2	C
27	Federal. (E) FGZ-18	2468	133 220	15000			7.00/200	7.00/200	7.00/200	Her DJXC	6	3 1/2	298	6.1	178	4	35	XXXXXX	NP 36700	3	Owa	Hy	3.90-4.78	3.90-4.78	3.90-4.78	Owa	O4IH	321	502	A	TX	60H	8 1/2 x 3 1/2	C
28	Federal. (E) FGZ-19	2468	133 220	15000			7.00/200	7.00/200	7.00/200	Her DJXC	6	3 1/2	298	6.1	178	4	35	XXXXXX	NP 36700	3	Owa	Hy	3.90-4.78	3.90-4.78	3.90-4.78	Owa	O4IH	321	502	A	TX	60H	8 1/2 x 3 1/2	C
29	Federal. (E) FGZ-20	2468	133 220	15000			7.00/200	7.00/200	7.00/200	Her DJXC	6	3 1/2	298	6.1	178	4	35	XXXXXX	NP 36700	3	Owa	Hy	3.90-4.78	3.90-4.78	3.90-4.78	Owa	O4IH	321	502	A	TX	60H	8 1/2 x 3 1/2	C
30	Federal. (E) FGZ-21	2468	133 220	15000			7.00/200	7.00/200	7.00/200	Her DJXC	6	3 1/2	298	6.1	178	4	35	XXXXXX	NP 36700	3	Owa	Hy	3.90-4.78	3.90-4.78	3.90-4.78	Owa	O4IH	321	502	A	TX	60H	8 1/2 x 3 1/2	C
31	Federal. (E) FGZ-22	2468	133 220	15000			7.00/200	7.00/200	7.00/200	Her DJXC	6	3 1/2	298	6.1	178	4	35	XXXXXX	NP 36700	3	Owa	Hy	3.90-4.78	3.90-4.78	3.90-4.78	Owa	O4IH	321	502	A	TX	60H	8 1/2 x 3 1/2	C
32	Federal. (E) FGZ-23	2468	133 220	15000			7.00/200	7.00/200	7.00/200	Her DJXC	6	3 1/2	298	6.1	178	4	35	XXXXXX	NP 36700	3	Owa	Hy	3.90-4.78	3.90-4.78	3.90-4.78	Owa	O4IH	321	502	A	TX	60H	8 1/2 x 3 1/2	C
33	Federal. (E) FGZ-24	2468	133 220	15000			7.00/200	7.00/200	7.00/200	Her DJXC	6	3 1/2	298	6.1	178	4	35	XXXXXX	NP 36700	3	Owa	Hy	3.90-4.78	3.90-4.78	3.90-4.78	Owa	O4IH	321	502	A	TX	60H	8 1/2 x 3 1/2	C
34	Federal. (E) FGZ-25	2468	133 220	15000			7.00/200	7.00/200	7.00/200	Her DJXC	6	3 1/2	298	6.1	178	4	35	XXXXXX	NP 36700	3	Owa	Hy	3.90-4.78	3.90-4.78	3.90-4.78	Owa	O4IH	321	502	A	TX	60H	8 1/2 x 3 1/2	C
35	Federal. (E) FGZ-26	2468	133 220	15000			7.00/200	7.00/200	7.00/200	Her DJXC	6	3 1/2	298	6.1	178	4	35	XXXXXX	NP 36700	3	Owa	Hy	3.90-4.78	3.90-4.78	3.90-4.78	Owa	O4IH	321	502	A	TX	60H	8 1/2 x 3 1/2	C
36	Federal. (E) FGZ-27	2468	133 220	15000			7.00/200	7.00/200	7.00/200	Her DJXC	6	3 1/2	298	6.1	178	4	35	XXXXXX	NP 36700	3	Owa	Hy	3.90-4.78	3.90-4.78	3.90-4.78	Owa	O4IH	321	502	A	TX	60H	8 1/2 x 3 1/2	C
37	Federal. (E) FGZ-28	2468	133 220	15000			7.00/200	7.00/200	7.00/200	Her DJXC	6	3 1/2	298	6.1	178	4	35	XXXXXX	NP 36700	3	Owa	Hy	3.90-4.78	3.90-4.78	3.90-4.78	Owa	O4IH	321	502	A	TX	60H	8 1/2 x 3 1/2	C
38	Federal. (E) FGZ-29	2468	133 220	15000			7.00/200	7.00/200	7.00/200	Her DJXC	6																							

Line Number	MAKE AND MODEL	GENERAL (See Keynote)				TIRE SIZES				ENGINE DETAILS				TRANSMISSION		REAR AXLE		FRONT AXLE		BRAKES			FRAME									
		Tonnage Rating	Chassis Price	Standard Wheelbase	Max. W. B.	Gross Vehicle Weight	Chassis Wt.	Standard Front and Rear	Dual rear S-single rear	No. of Cylinders	Bore and Stroke	Displacement	Comp. Ratio	Torque lb. ft.	Max. Brake H.P. at R.P.M.	Number and Diameter	Governor Standard	Make and Model	Forward Spd's	Make and Model	Gear and Type	Drive & Torque	Range in High	Make and Model	Make Location	Lineing	Drum Area	Drum Material	Hand Location	Side Rail Dimensions	Type	
1	La France E46B	3 1/2-5 1/2	3070	175 1/2	215	2000	7850	8.25/20D	8.25/20D	6-4 1/4	6-4 1/4 x 5 1/2	320	5.5	210	86-3000	7-3 1/2 x 10	Y	Ful 5A33	5	Ful 5A33	5	5	R	R 57-7.80	Tim 35000H	L41HV	384	794	384	XL	96	96
2	Republic E46B	3 1/2-5 1/2	3175	175 1/2	215	2000	7925	8.25/20D	8.25/20D	6-4 1/4	6-4 1/4 x 5 1/2	320	5.5	210	86-3000	7-3 1/2 x 10	Y	Ful 5A33	5	Ful 5A33	5	5	R	R 57-7.80	Tim 35000H	L41HV	384	794	384	XL	96	96
3	Cont. E46B	3 1/2-5 1/2	3280	175 1/2	215	2000	8000	8.25/20D	8.25/20D	6-4 1/4	6-4 1/4 x 5 1/2	320	5.5	210	86-3000	7-3 1/2 x 10	Y	Ful 5A33	5	Ful 5A33	5	5	R	R 57-7.80	Tim 35000H	L41HV	384	794	384	XL	96	96
4	Cont. E46B	3 1/2-5 1/2	3380	175 1/2	215	2000	8075	8.25/20D	8.25/20D	6-4 1/4	6-4 1/4 x 5 1/2	320	5.5	210	86-3000	7-3 1/2 x 10	Y	Ful 5A33	5	Ful 5A33	5	5	R	R 57-7.80	Tim 35000H	L41HV	384	794	384	XL	96	96
5	Cont. E46B	3 1/2-5 1/2	3480	175 1/2	215	2000	8150	8.25/20D	8.25/20D	6-4 1/4	6-4 1/4 x 5 1/2	320	5.5	210	86-3000	7-3 1/2 x 10	Y	Ful 5A33	5	Ful 5A33	5	5	R	R 57-7.80	Tim 35000H	L41HV	384	794	384	XL	96	96
6	Cont. E46B	3 1/2-5 1/2	3580	175 1/2	215	2000	8225	8.25/20D	8.25/20D	6-4 1/4	6-4 1/4 x 5 1/2	320	5.5	210	86-3000	7-3 1/2 x 10	Y	Ful 5A33	5	Ful 5A33	5	5	R	R 57-7.80	Tim 35000H	L41HV	384	794	384	XL	96	96
7	Cont. E46B	3 1/2-5 1/2	3680	175 1/2	215	2000	8300	8.25/20D	8.25/20D	6-4 1/4	6-4 1/4 x 5 1/2	320	5.5	210	86-3000	7-3 1/2 x 10	Y	Ful 5A33	5	Ful 5A33	5	5	R	R 57-7.80	Tim 35000H	L41HV	384	794	384	XL	96	96
8	Cont. E46B	3 1/2-5 1/2	3780	175 1/2	215	2000	8375	8.25/20D	8.25/20D	6-4 1/4	6-4 1/4 x 5 1/2	320	5.5	210	86-3000	7-3 1/2 x 10	Y	Ful 5A33	5	Ful 5A33	5	5	R	R 57-7.80	Tim 35000H	L41HV	384	794	384	XL	96	96
9	Cont. E46B	3 1/2-5 1/2	3880	175 1/2	215	2000	8450	8.25/20D	8.25/20D	6-4 1/4	6-4 1/4 x 5 1/2	320	5.5	210	86-3000	7-3 1/2 x 10	Y	Ful 5A33	5	Ful 5A33	5	5	R	R 57-7.80	Tim 35000H	L41HV	384	794	384	XL	96	96
10	Cont. E46B	3 1/2-5 1/2	3980	175 1/2	215	2000	8525	8.25/20D	8.25/20D	6-4 1/4	6-4 1/4 x 5 1/2	320	5.5	210	86-3000	7-3 1/2 x 10	Y	Ful 5A33	5	Ful 5A33	5	5	R	R 57-7.80	Tim 35000H	L41HV	384	794	384	XL	96	96
11	Cont. E46B	3 1/2-5 1/2	4080	175 1/2	215	2000	8600	8.25/20D	8.25/20D	6-4 1/4	6-4 1/4 x 5 1/2	320	5.5	210	86-3000	7-3 1/2 x 10	Y	Ful 5A33	5	Ful 5A33	5	5	R	R 57-7.80	Tim 35000H	L41HV	384	794	384	XL	96	96
12	Cont. E46B	3 1/2-5 1/2	4180	175 1/2	215	2000	8675	8.25/20D	8.25/20D	6-4 1/4	6-4 1/4 x 5 1/2	320	5.5	210	86-3000	7-3 1/2 x 10	Y	Ful 5A33	5	Ful 5A33	5	5	R	R 57-7.80	Tim 35000H	L41HV	384	794	384	XL	96	96
13	Cont. E46B	3 1/2-5 1/2	4280	175 1/2	215	2000	8750	8.25/20D	8.25/20D	6-4 1/4	6-4 1/4 x 5 1/2	320	5.5	210	86-3000	7-3 1/2 x 10	Y	Ful 5A33	5	Ful 5A33	5	5	R	R 57-7.80	Tim 35000H	L41HV	384	794	384	XL	96	96
14	Cont. E46B	3 1/2-5 1/2	4380	175 1/2	215	2000	8825	8.25/20D	8.25/20D	6-4 1/4	6-4 1/4 x 5 1/2	320	5.5	210	86-3000	7-3 1/2 x 10	Y	Ful 5A33	5	Ful 5A33	5	5	R	R 57-7.80	Tim 35000H	L41HV	384	794	384	XL	96	96
15	Cont. E46B	3 1/2-5 1/2	4480	175 1/2	215	2000	8900	8.25/20D	8.25/20D	6-4 1/4	6-4 1/4 x 5 1/2	320	5.5	210	86-3000	7-3 1/2 x 10	Y	Ful 5A33	5	Ful 5A33	5	5	R	R 57-7.80	Tim 35000H	L41HV	384	794	384	XL	96	96
16	Cont. E46B	3 1/2-5 1/2	4580	175 1/2	215	2000	8975	8.25/20D	8.25/20D	6-4 1/4	6-4 1/4 x 5 1/2	320	5.5	210	86-3000	7-3 1/2 x 10	Y	Ful 5A33	5	Ful 5A33	5	5	R	R 57-7.80	Tim 35000H	L41HV	384	794	384	XL	96	96
17	Cont. E46B	3 1/2-5 1/2	4680	175 1/2	215	2000	9050	8.25/20D	8.25/20D	6-4 1/4	6-4 1/4 x 5 1/2	320	5.5	210	86-3000	7-3 1/2 x 10	Y	Ful 5A33	5	Ful 5A33	5	5	R	R 57-7.80	Tim 35000H	L41HV	384	794	384	XL	96	96
18	Cont. E46B	3 1/2-5 1/2	4780	175 1/2	215	2000	9125	8.25/20D	8.25/20D	6-4 1/4	6-4 1/4 x 5 1/2	320	5.5	210	86-3000	7-3 1/2 x 10	Y	Ful 5A33	5	Ful 5A33	5	5	R	R 57-7.80	Tim 35000H	L41HV	384	794	384	XL	96	96
19	Cont. E46B	3 1/2-5 1/2	4880	175 1/2	215	2000	9200	8.25/20D	8.25/20D	6-4 1/4	6-4 1/4 x 5 1/2	320	5.5	210	86-3000	7-3 1/2 x 10	Y	Ful 5A33	5	Ful 5A33	5	5	R	R 57-7.80	Tim 35000H	L41HV	384	794	384	XL	96	96
20	Cont. E46B	3 1/2-5 1/2	4980	175 1/2	215	2000	9275	8.25/20D	8.25/20D	6-4 1/4	6-4 1/4 x 5 1/2	320	5.5	210	86-3000	7-3 1/2 x 10	Y	Ful 5A33	5	Ful 5A33	5	5	R	R 57-7.80	Tim 35000H	L41HV	384	794	384	XL	96	96
21	Cont. E46B	3 1/2-5 1/2	5080	175 1/2	215	2000	9350	8.25/20D	8.25/20D	6-4 1/4	6-4 1/4 x 5 1/2	320	5.5	210	86-3000	7-3 1/2 x 10	Y	Ful 5A33	5	Ful 5A33	5	5	R	R 57-7.80	Tim 35000H	L41HV	384	794	384	XL	96	96
22	Cont. E46B	3 1/2-5 1/2	5180	175 1/2	215	2000	9425	8.25/20D	8.25/20D	6-4 1/4	6-4 1/4 x 5 1/2	320	5.5	210	86-3000	7-3 1/2 x 10	Y	Ful 5A33	5	Ful 5A33	5	5	R	R 57-7.80	Tim 35000H	L41HV	384	794	384	XL	96	96
23	Cont. E46B	3 1/2-5 1/2	5280	175 1/2	215	2000	9500	8.25/20D	8.25/20D	6-4 1/4	6-4 1/4 x 5 1/2	320	5.5	210	86-3000	7-3 1/2 x 10	Y	Ful 5A33	5	Ful 5A33	5	5	R	R 57-7.80	Tim 35000H	L41HV	384	794	384	XL	96	96
24	Cont. E46B	3 1/2-5 1/2	5380	175 1/2	215	2000	9575	8.25/20D	8.25/20D	6-4 1/4	6-4 1/4 x 5 1/2	320	5.5	210	86-3000	7-3 1/2 x 10	Y	Ful 5A33	5	Ful 5A33	5	5	R	R 57-7.80	Tim 35000H	L41HV	384	794	384	XL	96	96
25	Cont. E46B	3 1/2-5 1/2	5480	175 1/2	215	2000	9650	8.25/20D	8.25/20D	6-4 1/4	6-4 1/4 x 5 1/2	320	5.5	210	86-3000	7-3 1/2 x 10	Y	Ful 5A33	5	Ful 5A33	5	5	R	R 57-7.80	Tim 35000H	L41HV	384	794	384	XL	96	96
26	Cont. E46B	3 1/2-5 1/2	5580	175 1/2	215	2000	9725	8.25/20D	8.25/20D	6-4 1/4	6-4 1/4 x 5 1/2	320	5.5	210	86-3000	7-3 1/2 x 10	Y	Ful 5A33	5	Ful 5A33	5	5	R	R 57-7.80	Tim 35000H	L41HV	384	794	384	XL	96	96
27	Cont. E46B	3 1/2-5 1/2	5680	175 1/2	215	2000	9800	8.25/20D	8.25/20D	6-4 1/4	6-4 1/4 x 5 1/2	320	5.5	210	86-3000	7-3 1/2 x 10	Y	Ful 5A33	5	Ful 5A33	5	5	R	R 57-7.80	Tim 35000H	L41HV	384	794	384	XL	96	96
28	Cont. E46B	3 1/2-5 1/2	5780	175 1/2	215	2000	9875	8.25/20D	8.25/20D	6-4 1/4	6-4 1/4 x 5 1/2	320	5.5	210	86-3000	7-3 1/2 x 10	Y	Ful 5A33	5	Ful 5A33	5	5	R	R 57-7.80	Tim 35000H	L41HV	384	794	384	XL	96	96
29	Cont. E46B	3 1/2-5 1/2	5880	175 1/2	215	2000	9950	8.25/20D	8.25/20D	6-4 1/4	6-4 1/4 x 5 1/2	320	5.5	210	86-3000	7-3 1/2 x 10	Y	Ful 5A33	5	Ful 5A33	5	5	R	R 57-7.80	Tim 35000H	L41HV	384	794	384	XL	96	96
30	Cont. E46B	3 1/2-5 1/2	5980	175 1/2	215	2000	10025	8.25/20D	8.25/20D	6-4 1/4	6-4 1/4 x 5 1/2	320	5.5	210	86-3000	7-3 1/2 x 10	Y	Ful 5A33	5	Ful 5A33	5	5	R	R 57-7.80	Tim 35000H	L41HV	384	794	384	XL	96	96
31	Cont. E46B	3 1/2-5 1/2	6080	175 1/2	215	2000	10100	8.25/20D	8.25/20D	6-4 1/4	6-4 1/4 x 5 1/2	320	5.5	210	86-3000	7-3 1/2 x 10	Y	Ful 5A33	5	Ful 5A33	5	5	R	R 57-7.80	Tim 35000H	L41HV	384	794	384	XL	96	96
32	Cont. E46B	3 1/2-5 1/2	6180	175 1/2	215	2000	10175	8.25/20D	8.25/20D	6-4 1/4	6-4 1/4 x 5 1/2	320	5.5	210	86-3000	7-3 1/2 x 10	Y	Ful 5A33	5	Ful 5A33	5	5	R	R 57-7.80	Tim 35000H	L41HV	384	794	384	XL	96	96
33	Cont. E46B	3 1/2-5 1/2	6280	175 1/2	215	2000	10250	8.25/20D	8.25/20D	6-4 1/4	6-4 1/4 x 5 1/2	320	5.5	210	86-3000	7-3 1/2 x 10	Y	Ful 5A33	5	Ful 5A33	5	5	R	R 57-7.80	Tim 35000H	L41HV	384	794	384	XL	96	96
34	Cont. E46B	3 1/2-5 1/2	6380	175 1/2	215	2000	10325	8.25/20D	8.25/20D	6-4 1/4	6-4 1/4 x 5 1/2	320	5.5	210	86-3000	7-3 1/2 x 10	Y	Ful 5A33	5	Ful 5A33	5	5	R	R 57-7.80	Tim 35000H	L41HV	384	794	384	XL	96	96
35	Cont. E46B	3 1/2-5 1/2	6480	175 1/2	215	2000	10400	8.25/20D	8.25/20D	6-4 1/4	6-4 1/4 x 5 1/2	320	5.5	210	86-3000	7-3 1/2 x 10	Y	Ful 5A33	5	Ful 5A33	5	5	R	R 57-7.80	Tim 35000H	L41HV	384	794	384	XL	96	96
36	Cont. E46B	3 1/2-5 1/2	6580	175 1/2	215	2000	10475	8.25/20D	8.25/20D	6-4 1/4	6-4 1/4 x 5 1/2	320	5.5	210	86-3000	7-3 1/2 x 10	Y	Ful 5A33	5	Ful 5A33	5	5	R	R 57-7.80	Tim 35000H	L41HV	384	794	384	XL	96	96
37	Cont. E46B	3 1/2-5 1/2	6680	175																												

(*) Price includes chassis & cab.

(*) Price includes chassis & cab.

Line Number	MAKE MODEL	GENERAL (See Keynote)				TIRE SIZES		ENGINE DETAILS				TRANSMISSION		REAR AXLE		FRONT AXLE	BRAKES				FRAME									
		Tonnage Rating	Chassis Price	Standard Wheelbase	Gross Vehicle Weight	Chassis Wt. (Stripped)	Standard Front and Rear	Dual rear S-single rear	No. of Cylinders, Stroke	Displacement	Comp. Ratio	Torque lb. ft.	H.P. at R.P.M.	Main Bearings Number, Length	Governor Standard		Make and Model	Forward Spd's	Make and Model	Gear and Type		Drive & Torque	Range Ratio in High	Make and Model	Location	Operat'n	Limiting Area	Drum Area	Drum Material	Hand Location
1	Sket. FBT1522C2F	8-10	4105	177	207	32000	9475	9.00/20D	9.75/20	6.75/20	404	6-3 1/2 x 3 1/2	Wau 6MZ	Y	Own U25	5	Tim SBT251H SF	R 5.57-7.50	Tim 35000N	L4THV	584	1024	a	584	1024	TX	01	10.3 1/4 x 3 1/4	L	
2	Ing. FWS182 4R	8-10	4560	177	207	32000	9650	9.00/20D	9.75/20	6.75/20	404	6-3 1/2 x 3 1/2	Wau 6MZ	Y	Own U25	5	Tim SBT251H SF	R 5.57-7.50	Tim 35000N	L4THV	584	1024	a	584	1024	TX	01	10.3 1/4 x 3 1/4	L	
3	(7) FDS180 4R	10-12	8490	181	211	40000	13500	9.75/20D	10.50/22	7.50/20	404	6-3 1/2 x 3 1/2	Wau 6-125	Y	Own U25	4	Own SR352W 2F	R 7.33-10.3	Tim 26450N	W447A	800	1352	A	800	1352	FX	93	9 3/4 x 3 1/4 x 3/8	L	
4	(7) HCS210 4R	12-18	11955	185	201	55000	14655	40xSD	10.50/24	7.50/20	677	6-5 3/8 x 3 1/2	Wau 6RB	Y	Own UC9	4	Own SR210W CD	R 9.98-13.25	Tim 27452N	W447A	792	1404	A	792	1404	FX	93	9 3/4 x 3 1/4 x 3/8	L	
5	Truckstell		1653	154	216	20000	5900	7.00/20D	7.50/20	6.75/20	216	6-3 1/2 x 3 1/2	Chev	Y	Chev	4	Eat 1265	SFD	U 5.83-8.37	Chev	CO1HV	511	729	c	511	729	c	81	7 1/2 x 3 1/2 x 3/8	C
6	(6) TRC-2X400 2F		1899	157	218	24000	6100	7.00/20D	7.50/20	6.75/20	216	6-3 1/2 x 3 1/2	Chev	Y	Chev	4	Eat 1465	SFD	U 5.83-9.02	Chev	BO1HV	511	729	c	511	729	c	81	7 1/2 x 3 1/2 x 3/8	C
7	(6) TRC-2X400 2F		1893	152	202	21000	6050	7.00/20D	7.50/20	6.75/20	216	6-3 1/2 x 3 1/2	Chev	Y	Chev	4	Eat 1465	SFD	U 5.83-9.02	Chev	BO1HV	511	729	c	511	729	c	81	7 1/2 x 3 1/2 x 3/8	C
8	(6) TRC-2X400 2F		1893	152	202	21000	6050	7.00/20D	7.50/20	6.75/20	216	6-3 1/2 x 3 1/2	Chev	Y	Chev	4	Eat 1465	SFD	U 5.83-9.02	Chev	BO1HV	511	729	c	511	729	c	81	7 1/2 x 3 1/2 x 3/8	C
9	(6) TRC-2X400 2F		2119	154	212	25000	6250	7.50/20D	8.25/20	6.75/20	216	6-3 1/2 x 3 1/2	Chev	Y	Chev	4	Eat 1265	SFD	U 5.83-9.56	Chev	CO1HV	511	729	c	511	729	c	81	7 1/2 x 3 1/2 x 3/8	C
10	(6) TRC-2X400 2F		2119	154	212	25000	6250	7.50/20D	8.25/20	6.75/20	216	6-3 1/2 x 3 1/2	Chev	Y	Chev	4	Eat 1265	SFD	U 5.83-9.56	Chev	CO1HV	511	729	c	511	729	c	81	7 1/2 x 3 1/2 x 3/8	C
11	(6) TRC-2X400 2F		2119	154	212	25000	6250	7.50/20D	8.25/20	6.75/20	216	6-3 1/2 x 3 1/2	Chev	Y	Chev	4	Eat 1265	SFD	U 5.83-9.56	Chev	CO1HV	511	729	c	511	729	c	81	7 1/2 x 3 1/2 x 3/8	C
12	(6) TRC-2X400 2F		2119	154	212	25000	6250	7.50/20D	8.25/20	6.75/20	216	6-3 1/2 x 3 1/2	Chev	Y	Chev	4	Eat 1265	SFD	U 5.83-9.56	Chev	CO1HV	511	729	c	511	729	c	81	7 1/2 x 3 1/2 x 3/8	C
13	(6) TRC-2X400 2F		2119	154	212	25000	6250	7.50/20D	8.25/20	6.75/20	216	6-3 1/2 x 3 1/2	Chev	Y	Chev	4	Eat 1265	SFD	U 5.83-9.56	Chev	CO1HV	511	729	c	511	729	c	81	7 1/2 x 3 1/2 x 3/8	C
14	(6) TRC-2X400 2F		1818	156	214	20000	6000	7.00/20D	7.50/20	6.75/20	216	6-3 1/2 x 3 1/2	Chev	Y	Chev	4	Eat 1265	SFD	U 5.83-9.56	Chev	CO1HV	511	729	c	511	729	c	81	7 1/2 x 3 1/2 x 3/8	C
15	(6) TRC-2X400 2F		1875	157	216	24000	6200	7.00/20D	7.50/20	6.75/20	216	6-3 1/2 x 3 1/2	Chev	Y	Chev	4	Eat 1265	SFD	U 5.83-9.56	Chev	CO1HV	511	729	c	511	729	c	81	7 1/2 x 3 1/2 x 3/8	C
16	(6) TRC-2X400 2F		1875	157	216	24000	6200	7.00/20D	7.50/20	6.75/20	216	6-3 1/2 x 3 1/2	Chev	Y	Chev	4	Eat 1265	SFD	U 5.83-9.56	Chev	CO1HV	511	729	c	511	729	c	81	7 1/2 x 3 1/2 x 3/8	C
17	(6) TRC-2X400 2F		1875	157	216	24000	6200	7.00/20D	7.50/20	6.75/20	216	6-3 1/2 x 3 1/2	Chev	Y	Chev	4	Eat 1265	SFD	U 5.83-9.56	Chev	CO1HV	511	729	c	511	729	c	81	7 1/2 x 3 1/2 x 3/8	C
18	(6) TRC-2X400 2F		1875	157	216	24000	6200	7.00/20D	7.50/20	6.75/20	216	6-3 1/2 x 3 1/2	Chev	Y	Chev	4	Eat 1265	SFD	U 5.83-9.56	Chev	CO1HV	511	729	c	511	729	c	81	7 1/2 x 3 1/2 x 3/8	C
19	(6) TRC-2X400 2F		1875	157	216	24000	6200	7.00/20D	7.50/20	6.75/20	216	6-3 1/2 x 3 1/2	Chev	Y	Chev	4	Eat 1265	SFD	U 5.83-9.56	Chev	CO1HV	511	729	c	511	729	c	81	7 1/2 x 3 1/2 x 3/8	C
20	(6) TRC-2X400 2F		1875	157	216	24000	6200	7.00/20D	7.50/20	6.75/20	216	6-3 1/2 x 3 1/2	Chev	Y	Chev	4	Eat 1265	SFD	U 5.83-9.56	Chev	CO1HV	511	729	c	511	729	c	81	7 1/2 x 3 1/2 x 3/8	C
21	White	904	3185	160	214	20000	7360	7.00/20D	7.50/20	6.75/20	216	6-3 1/2 x 3 1/2	Own 270	Y	Own	4	Tim SBT 1000 2F	R 5.93-8.30	Own	L61HV	514	843	a	514	843	TX	84	7x3 1/2 x 3 1/2	TF	
22	White	915	4995	160	214	20000	7360	7.00/20D	7.50/20	6.75/20	216	6-3 1/2 x 3 1/2	Own 318	Y	Own	4	Tim SBT 1000 2F	R 5.93-8.30	Own	L61HV	514	843	a	514	843	TX	84	7x3 1/2 x 3 1/2	TF	
23	White	920	7550	155	235	20000	12230	9.00/20D	10.50/22	7.50/20	404	6-3 1/2 x 3 1/2	Own 460	Y	Own	5	Tim SDD353 2F	R 7.33-9.11	Own	O61A	1014	1549	a	1014	1549	TX	84	8 1/4 x 3 1/2 x 3/8	TF	
24	White	922	9350	155	235	20000	13575	9.75/20D	11.25/22	7.50/20	404	6-3 1/2 x 3 1/2	Own 529	Y	Own 36B	5	Tim SDD452 2F	R 8.15-10.2	Own	O61A	1014	1549	a	1014	1549	TX	84	8 1/4 x 3 1/2 x 3/8	TF	
25	White	991	10900	146	245	20000	15825	10.50/24	11.25/24	7.50/20	404	6-3 1/2 x 3 1/2	Own 580	Y	Own 10BB	5	Tim SDD452 2F	R 8.15-10.2	Own	O61A	1014	1549	a	1014	1549	TX	84	8 1/4 x 3 1/2 x 3/8	TF	
26	White	950	5520	160	237	20000	12500	9.00/20D	9.75/20	6.75/20	216	6-3 1/2 x 3 1/2	Own 362	Y	Own 51B	5	Tim SDD452 2F	R 7.00-8.40	Own	L61HV	514	843	a	514	843	TX	84	8 1/4 x 3 1/2 x 3/8	TF	

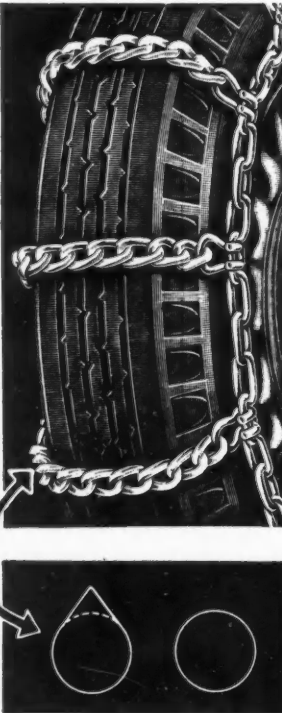
x Front 7.00/20.

CLAW TRUCK CHAINS

can take it!

20% more CLAW alloy steel biting at the point of traction
GIVES LONGER, SAFER MILEAGE

Yes, CLAW chains can take the terrific punishment of truck transportation because they are truck chains right down to the alloy that goes into every last link.



No chain made can equal the holding power of the exclusive CLAW cross links — links with a protruding wedge of CLAW alloy steel (toughest metal known to chandim) that actually CLAWS into the roadway for a determined grip. (See diagram to the left.) This wedge, giving 20% more steel to each cross chain, is kept constantly sharp by the honing effect of the pavement.

CLAWS are quick on and sure on, thanks to the improved Blue Boy Fastener. Special Indented Rim Chains eliminate play and prevent excessive breakage between cross chains and rim chains.

Keep your schedules on time in all kinds of weather and keep your chain costs down: Specify CLAWS all around.

COLUMBUS-McKINNON CHAIN CORP.

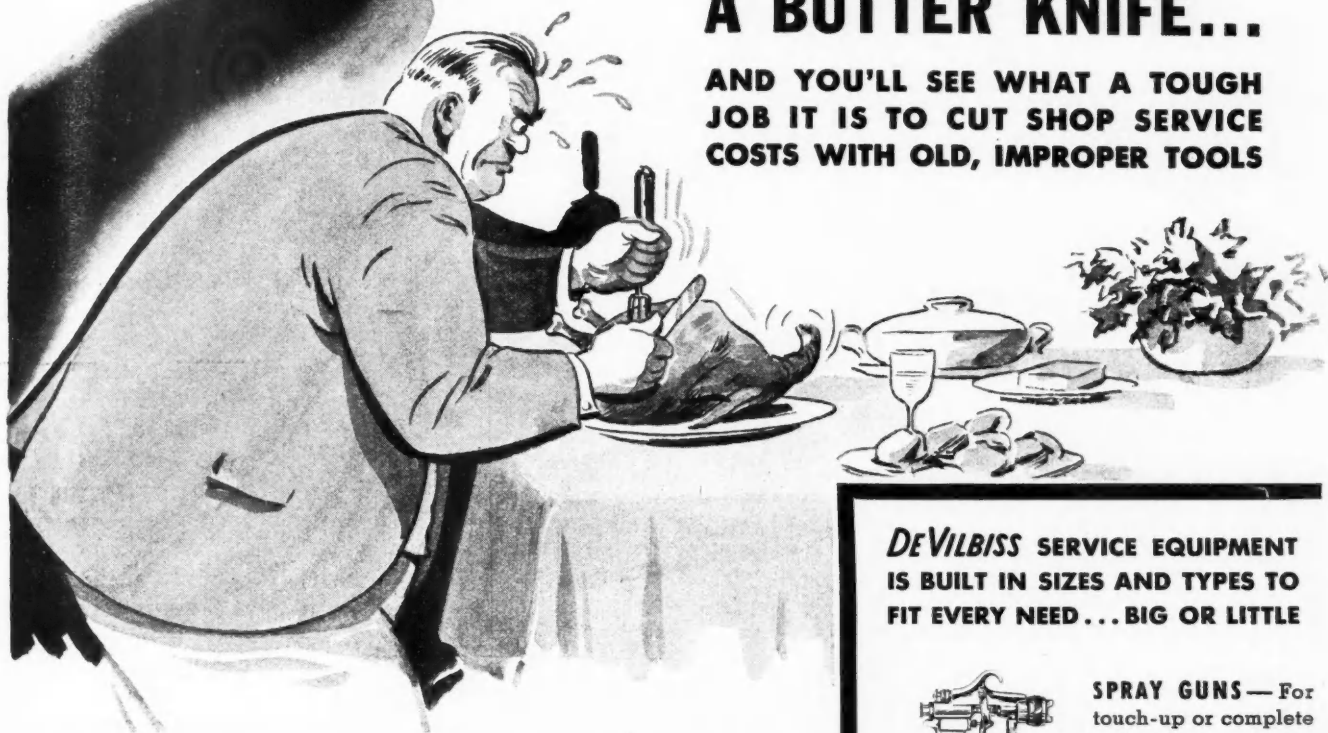
General Offices: TONAWANDA, N. Y.

Plants at St. Catharines, Ont. Can. and Vereeniging, So. Africa

CLAW★ TRUCK CHAINS

Try CARVING THE SUNDAY FOWL WITH A BUTTER KNIFE...

AND YOU'LL SEE WHAT A TOUGH JOB IT IS TO CUT SHOP SERVICE COSTS WITH OLD, IMPROPER TOOLS



GET MODERN, EFFICIENT, RELIABLE DEVILBISS SERVICE EQUIPMENT...

Carving chicken or cutting costs, the job's easier with proper equipment. In many ways, on many jobs in your shop, modern DeVilbiss Service Equipment will stop repeated equipment failures, frequent repairs and replacements, excessive costs and inferior workmanship.

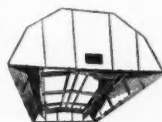
On refinishing and touch-up, DeVilbiss Spray-Painting Equipment will do it faster, better, at lower cost—just as it finishes new trucks. You can always depend on DeVilbiss Compressors for an ample air supply without a letdown—without repair. Hose breakage and replacements can be reduced with tough, specially constructed DeVilbiss Hose. The speed and quality of lubrication can be stepped up with fast, sure-action DeVilbiss Oil Guns.

That's why DeVilbiss Service Equipment is used in the most efficiently operated truck service shops. Write for details. The DeVilbiss Company, Toledo, O.

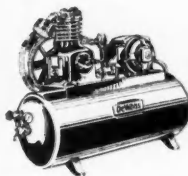
DEVILBISS SERVICE EQUIPMENT
IS BUILT IN SIZES AND TYPES TO
FIT EVERY NEED... BIG OR LITTLE



SPRAY GUNS—For touch-up or complete refinishing — maintenance painting operations.



CANOPY EXHAUST EQUIPMENT—For ventilation of the finishing area on complete refinishing jobs.



AIR COMPRESSORS—For any service need — $\frac{1}{4}$ to 10 H.P.—vertical or horizontal types —single or two-stage.



HOSE AND CONNECTIONS—Air, water, oil, welding and gasoline pump hose. Permanent or quick detachable connections.



OIL GUNS—Spray or stream types — hand or air operated for high-speed chassis lubrication.

DEVILBISS • SERVICE • EQUIPMENT

CHAIN

(CONTINUED FROM PAGE 23)

much can never be told accurately in advance because the length of the snow and ice period varies from year to year even in the same location. Another factor that enters into the cost of chains is the fluctuations in temperature during the snow and ice season. If there is snow one day and it melts leaving streets bare the next

and this is repeated frequently, the chains are operating half of the time on bare pavement, with the result that they pound themselves to pieces. When chain repairs run high it almost follows that the labor cost of handling chains amounts to more money in a season than the cost of the chains. Both labor and material cost can be reduced appreciably by reducing chain maintenance to the same orderly type of procedure that governs preventive maintenance inspections.

Fleet operators who have made progress in handling chains report that under no consideration should mechanics be allowed to work on chains on the floor, nor should they be permitted to work without proper tool equipment. Without a tool for removing worn or broken cross links and installing new ones the personal injury accidents are frequent as a result of using a hammer and chisel. There is also a terrific time penalty.

The chain stretching bench illustrated in Fig. 1 has been in use for some time in a fleet shop that operates about 65 trucks. The report on it states that two men are able to keep up with the chain situation as the trucks come in to be gassed, oiled and washed. Previously it sometimes took the inspectors all night to repair the chains, frequently holding up loading in the morning. Counterweights and pulleys hold the chains in line.

A portable chain stretching apparatus for smaller fleets is shown in Fig. 2. The reason it qualifies for small fleets is because it is portable and it can be made right in the fleet shop without any great outlay for material or labor. Being portable it can be moved into a convenient location and out of the way without seriously disturbing shop routine. It can be set on a work bench or upon a couple of horses. A welding torch and a little flat stock is all that is required to make it. Here the chains are stretched by two screen door springs. Dimensions are shown in both cases.

These suggestions have only to do with the actual repairing of chains. So far nothing has been said about prevention of the work. To reduce the amount of useful work done it is necessary to retard the rate at which cross links wear to the breaking point and to do something about the patented catches that get wound up in knots with a little abuse.

Several fleets have solved the fastener problem by replacing the fasteners with harness snaps. These snaps have rather a fragile look and upon questioning one fleet operator who has been using them he said, "Sure they break more easily than the regular chain fasteners. But they break clean and it does not take a lot of time to remove the chain from the tire when a fastener is so twisted that

(TURN TO PAGE 62, PLEASE)



"TURNING Involves every Road Hazard!"

Says John F. Winchester
Manager, General Automotive
Division, ESSO Marketers

"That's why we equipped our ESSO fleet with directional signals, even before compulsory legislation on this accessory was known.

"Thorough tests proved that the Connecticut Directional Signals gave us all of the safety features we wanted. Visibility, both day and night, exceeded our requirements—quality of construction has proved entirely satisfactory.

"I consider it an investment in accident prevention that has repaid us many times over."

Give your fleet this extra protection by installing Connecticut Directional Signals. They're easily installed in your own shop. When ordering new equipment, specify "Connecticut."

CONNECTICUT TELEPHONE & ELECTRIC CORPORATION
MERIDEN, CONNECTICUT



OSHKOSH

Announces New Improved Models



AGAIN OSHKOSH LEADS:

(Backed by 19 years' successful 4-Wheel Drive building)

*In Design
In Construction
In Value*

- New Low Streamlined Design
- New Shock-proof Steering

- New Large Roomy Air Conditioned Cabs
- New Heavy Double Reduction Axles

— OSHKOSH AUTOMATIC LOCKING CENTER DIFFERENTIAL

The New Models

W500

W600

W700

W800

W900

Ranging from 5 to 10 ton capacity

**Oshkosh 4-Wheel Drive — Best for Snow
Removal and ALL Hard-to-do Work**

Dealers: Good territory is available. Write us today.

OSHKOSH 4-WHEEL DRIVE SALES AGENCY

OSHKOSH, WISCONSIN, CABLE ADDRESS, "OSHMOTOR" OSHKOSH

Exclusive Sales Agency for Oshkosh Motor Truck, Inc.

(CONTINUED FROM PAGE 60)

you cannot unfasten it, especially when it is between dual wheels. The harness snaps never come undone by themselves and when they break they can be replaced in two minutes."

Retarding the rate of wear on cross links can be done by facing the cross links with a hard wear-resisting metal when they are partly worn through. The usual method seems to be to let the cross link wear itself about half-way through and then rebuild with stellite or some other welding mate-

rial usually by electric welding. There are reports of cross links lasting through an entire season when so treated and at least one report that facing the cross links is cheaper than buying new ones. Other fleets indicate that it is entirely a matter of cost and so it becomes a problem of developing an economical technique of applying the facing metal and of purchasing the metal at a price which when combined with the cost of applying, will result in a reduction in chain outlay rather than an increase.

The layout showing chain sizes (Fig. 3) is for the working surface of the chain bench. It is not complete since it was developed for one particular fleet. It represents an effort to standardize on chain sizes which has worked very well.

In order to keep the inventory of cross links as low as possible and the different sizes down to the lowest number necessary to service the fleet, a study of chain sizes is necessary. By varying the length of the stretcher chain it is possible to reduce the number of cross link sizes. Since the cross links are the part that have high replacement, this is desirable. Different make chains do not always match up in cross link length even though they will all fit a given tire size. Thus when the fleet is large enough it may be worth while to buy the chain in bulk rather than in tailored sets and tailor the chain in the fleet shop.

By laying out the working surface of the chain bench as shown in Fig. 3 it is possible to stretch various size chains from a common point at upper left corner to predetermined widths and lengths where they are pegged on a machine screw through a hole drilled in the table top.

This makes it possible to identify the chains immediately by size and to replace worn cross links with the proper size. It is then possible to have fewer spares without running the risk of having them mixed up with the confusion that is bound to follow.

And just one added thought. Get all of the garage jacks in working order. A great deal of time can be lost if there are not enough jacks to get the back ends up and down promptly once the trucks begin to come in.

QUIZ ANSWERS

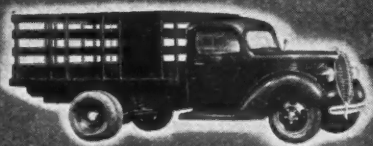
(See page 17)

1. British Thermal Unit.
2. 325,000.
3. About 20 billion.
4. Dept. of Agriculture.
5. Better than average.
6. Cannot see objects approaching from the side.
7. Wm. S. Knudsen is a native of Denmark.
8. Thornton Tandem Co., Truck Equipment Co. and Trucktor Corp. make third axles.
9. ICC.
10. Vulcanization of rubber.

COMMERCIAL CAR JOURNAL
OCTOBER, 1939

Midland Stops Them All!

A complete range of sizes available in both Air and Vacuum Power Brakes for every size and type of vehicle " " "

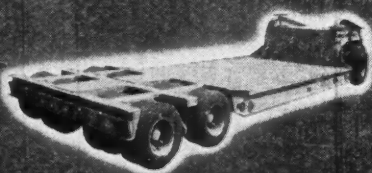


FROM THIS

1 1/2 Ton
DELIVERY

TO THIS

70 Ton
TRAILER



• Those who KNOW power brakes... choose Midland! That includes both the nation's largest fleet owners and the prominent manufacturers who select Midland as standard factory equipment. Today, for example, more new trailers are delivered with Midland power brakes than any other type of power brake equipment! Such widespread acceptance and satisfaction is additional proof that Midland power brake equipment will serve *your* fleet better.

Call your nearest Midland distributor today for complete information and prices.

THE MIDLAND STEEL PRODUCTS CO.
10605 Madison Avenue • Cleveland, Ohio
Export Department, 38 Pearl Street, New York City

BE SURE YOU GET ALL THESE FEATURES

1. Quickly and easily installed—simple instructions included
2. Simple in design—rugged in construction
3. Fully complies with all city and state laws
4. Nation-wide Midland service organization
5. Factory rebuilt exchange plan



MIDLAND
(CHRISTENSEN)
Power Brakes



When writing to advertisers please mention Commercial Car Journal

WHAT POWERFUL NEW HEAVY-DUTY BATTERY MAKES BIG COLD ENGINES

SAY "UNCLE"?

**"ASK YOUR
PREST-O-LITE
DEALER!"**



New SILVER JUBILEE HEAVY-DUTY SETS NEW "HIGH" IN LOW-COST PERFORMANCE

PREST-O-LITE celebrates its 25th Anniversary with a new SILVER JUBILEE Heavy-Duty Battery that's a real "workhorse!" Long haul, short haul, hot weather, cold weather, this remarkable battery has plenty of extra stamina and punch to handle big, stiff engines and make them like it! Twenty-five years of battery building has taught Prest-O-Lite how to make a battery that will roll 'em over when it's time to roll—and at lower first

cost and less maintenance cost than your operating figures probably show now! Ask your Prest-O-Lite dealer for complete details and technical data on the new SILVER JUBILEE Heavy-Duty Battery. Once you get the facts and compare them with your present equipment, you'll see at once that you're face-to-face with a new standard of battery performance.

PREST-O-LITE BATTERY CO., INC.
Indianapolis, Indiana

Manufacturing Plants at:

Indianapolis • Niagara Falls • Oakland
Oklahoma City • Toronto

COST-CUTTING FEATURES

Look!

EXTRA-THICK PLATES for greater capacity and longer battery life.

Look!

FIBERGLAS INSULATION in combination with select Port Orford Cedar separators add to battery life.

Look!

MORE RUGGED... DURABLE... Heavy construction to withstand jolting and road shock.

Look!

ACID AND LEAK-PROOF SEAL... Post, cover and cell connector welded together as one unit.

Look!

PERFECT SEALING at all temperatures insured by a special Prest-O-Lite compound.



prest-o-lite HEAVY-DUTY BATTERIES

We "Picket" THE POST

(continued from page 19)

increase at even half that for the next five years, what, eventually, are we going to do with them to avoid serious highway-traffic problems?"

The premise for this statement (and another burst of inflammatory reasoning) appears on page 67, thus:

"Last year's commercial-car registrations totaled 365,349, of which 73,000 were highway freighters, an average of 1400 'highway freight trains' going into service every week.

"Project these figures for ten years and what have we? Even if we cut them in half—which would be far too pessimistic, and grossly underestimating the vigor for expansion and development displayed by truck operators in their new, reaching-out industry—cut them in half, and what have we? We have a lot of rubber-tired freight trains added to our growing national traffic, and increasing the wear on our highways."

The iteration and reiteration of "1400 highway freight trains going into service every week" and the alarm attached thereto is founded on a premise that represents a woeful ignorance of the truck industry and of the significance of its statistics.

The statement that 73,000 of the new trucks registered last year went into the highway freight field has absolutely no foundation in fact. No agency compiles such a vocational statistic, therefore nobody knows how many trucks are bought in any one year by motor freight operators or by the operators in any other vocation. The figure of 73,000 used by THE POST is a stupid calculation which the slickest statistician in the industry could not support with the aid of slide-rule sleight-of-hand. It is based on the sheer guess that 20 per cent of all trucks registered are in the for-hire field. The guessing takes on a nightmare aspect in this paragraph on page 67:

"From 1934 to 1938—just five years—commercial-car registrations increased from 3,409,355 to 4,188,815. About 20 per cent, it is estimated, were highway freight units. Last year, for-hire trucks were estimated at 600,000. These figures, the latest, compiled by Commercial Car Journal, indicate the number now nearer 800,000."

If that paragraph means to say that Commercial Car Journal compiled and published the total registration figures

cited, we can take no offense. But if it means to attribute the for-hire estimates to Commercial Car Journal we resent the attempt to lay disreputable mathematics at the door of a reputable journal. How disreputable and nightmarish these estimates are is only too apparent. The estimate is stated as being 20 per cent, but the 600,000 figure is only a trifle over 14.2 per cent. The "800,000 now figure is simply outlandish. The article was published Aug. 19. THE POST, we understand, operates on a six-week schedule. In other words, the article left the hands of POST editors early in July. At that time truck registration figures were available only for the first four months of this year. The total was 160,627. That, remember, was trucks registered by all vocations. Yet THE POST gives 200,000 to the for-hire field alone. On THE POST system of projection, three times 200,000 will give the for-hire field a 100 per cent increase in registrations this year. That will mean 1,200,000 for-hire trucks, representing heaven knows what percentage of the total. Preposterous is hardly the word for such a projection and for THE POST's 800,000 figure.

The mathematical nightmare reaches its climax when we consider that for the first four months of this year THE POST gave the for-hire field a 200,000 truck increase, but held it down to a mere 73,000 trucks for all of 1938.

But even if we were generously to grant the statistically unsupported figure of 73,000 THE POST is still guilty of countenancing an entirely erroneous conclusion when it presumes that the 73,000 represents "an average of 1400 'highway freight trains' going into service every week." The conclusion is wrong in two respects:

1. The for-hire field does not restrict its purchases of trucks to combinations or "trains."

2. The conclusion makes no allowance for the replacement of obsolete vehicles. It hides from the public the fact that most new trucks are purchased to replace trucks that have outlived their usefulness.

As a matter of fact, the available statistics make it impossible to draw the conclusion that a single "highway freight train" went into service during all of last year to supplement trucks then in use. The records show that last year 365,349 new trucks were bought and registered in the United States. Yet the records also show that total

trucks registrations dropped from 4,237,244 in 1937 to 4,188,815 in 1938. In other words, not only were the 365,349 newly registered trucks swallowed up as replacements, but 48,429 other trucks were taken out of service.

This hardly supports THE POST's sensational thesis that "an average of 1400 'highway freight trains' are going into service every week." And it makes ridiculous the projection of this mythical figure for "ten years" and the speculation on "what have we." What we have unquestionably is the astounding evidence that THE POST has lent itself (doubtless unintentionally—but nevertheless inexcusably) to an attempt to inflame 25,000,000 motorists against motor trucks.

Those are the major criticisms; some minor ones can be made with equal justice:

1. There is that insidious remark injected into the statement, "From 1934 to 1938—just five years—commercial-car registrations increased from 3,409,355 to 4,188,815." It is true that the comparison shows a gain of 779,460 trucks in five years. But it is also true—and thus makes the "just five years" a scare-term—that in all of NINE years the gain was only 702,796. (1930 registrations were 3,486,019.)

2. There is the exaggeration in the statement that "In several states only the gross-weight restrictions keep highway freight trains from being a block long." Only a desire to be sensational would prompt the use of the word "several." The truth is that today only one state—Maryland—has no limit on its overall combination length. (See accompanying tabulation.)

3. There are the illustrations used by THE POST which are as unrepresentative as any illustrations could be of the vehicles in use by motor freight operators. They picture the highly useful "circus stunts" which special trucks are able to perform, but only with the aid of special permits and the cooperation of municipal authorities. They aren't the trucks that will present the hypothetical traffic-problem of the future which THE POST seems anxious to impress upon the "25,000,000 motorists who also use the highways." They are not related to that hypothetical problem in any way. Consequently their picturization by THE POST is exceedingly unfair because it tends to arouse an immediate prejudice in the mind of the reader who approaches the article. If the circus-stunt trucks ever present a traffic problem, THE POST may be sure that the rest of the truck industry will be among the first to complain and to work for its elimination.

4. There is the poison in the statement, "Contract carriers operating over

(TURN TO PAGE 66, PLEASE)

Corrected by AC

SHORT PLUG LIFE



- for Thirty Years
**THE QUALITY
SPARK PLUG**

Chevrolet, Diamond-T, Federal, GMC, International and White Trucks; Buick, Cadillac, Chevrolet, La Salle, Nash, Oldsmobile, and Pontiac motor cars; Allis-Chalmers, Cletrac and International Harvester Tractors... these are some of the well-known trucks, cars, and tractors which use AC Quality Spark Plugs. Trust your spark plug requirements to the same brand of spark plugs which the leading, big-volume manufacturers select.

COMMERCIAL CAR JOURNAL
OCTOBER, 1939

WHAT HAPPENED — (An Ohio case history.)

This contract hauler wasn't getting satisfactory service from his plugs. An AC representative found the following reasons: The heat range of plugs being used was incorrect, causing fouling or insulator cracking; and the cleaning done was not thorough, causing high and low speed skips. Substitution of AC plugs of the correct Heat Range, and a 4,000-mile schedule of thorough cleaning and regapping, eliminated the troubles.

The poor service this hauler was experiencing was caused not at all by spark plug faults. It was simply the result of a quite common situation,—namely, an attempt to get service from plugs, regardless of make, of a Heat Range not fitted to operating conditions; and failure to clean and regap regularly and carefully.

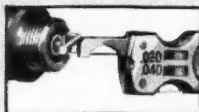
WHY AC'S SOLVED THE PROBLEM — This case is just one of thousands in which seemingly serious spark plug trouble has been corrected by application of the AC formula:

- 1 Standardize on the right *make* of plug
- 2 Select the correct *Heat Range*
- 3 Clean and regap all plugs every 3,000 to 4,000 miles

AC plugs solved this problem because they are engineered to give full satisfaction—constantly improved to keep them abreast of engine and fuel developments. The AC Heat Range,—most complete in the industry,—makes it possible for users to get the plug type which exactly fits their operations. The AC Cleaner and round wire gap gauge assure 100% cleaning, and absolute gap accuracy.

AC PLUG CLEANER (Model C)

Faster, better, with dual control that cleans and dusts in one operation .



AC Gap Gauge

Round wire "feelers" measure concave gaps accurately

Order from your AC Supplier



AC SPARK PLUG DIVISION • General Motors Corporation • FLINT, MICH.

When writing to advertisers please mention Commercial Car Journal

(CONTINUED FROM PAGE 64)
shorter distances but with 100-ton loads—are getting bigger and bigger.” That is an outrageous insinuation. There isn’t a state in the Union that will allow any truck carrier—common, contract or private—to haul such a load, or anywhere near it, except by special permit. The 100 tons is the occasional, circus-stunt load, having a proper place in the field of economical transportation, but playing an insignificant part in the lives of motorists.

All in all the article is an amazing

exhibition of inept editing by a reputable and powerful publication of which the truck industry certainly deserved better. In fact, it is astounding that what must have originated as an effort to present controversial transportation issues with scrupulous fairness in keeping with Post policy, turned out in large measure to be an insidious piece of anti-truck propaganda worthy of the shrewdest railroad publicist.

COMMERCIAL CAR JOURNAL,
George T. Hook, *Editor*.

Mr. Stout's Reply

Sept. 5, 1939.

DEAR MR. HOOK:

It is our rule when any writer's facts are questioned that he is entitled to first opportunity to reply in his own behalf, and we are forwarding your letter of the thirty-first to Mr. White for his comment.

Meanwhile, speaking for ourselves, the tone of your letter bores me. Because you know more about trucks than do we, I wonder why you should assume that we know nothing about them. I drive a good many thousand miles a year from the Atlantic to the Pacific, the Gulf to Canada and I see many instances of freight trains on the highways.

I don't have to travel to see them, for that matter. I live twenty miles north of Philadelphia, close to Butler Pike, a road so unimportant that it does not bear a number. Five nights a week about 1 A. M. three heavy trucks and trailers loaded with cast iron or stove parts for a Hatboro factory toil up the hill below us in low. They have gained enough momentum to shift through second and third to high just as they pass our house. Apart from the noise, their weight and momentum shakes the house literally. Any one who gets to sleep before they pass is likely to be waked. This road was not built for such traffic and we resent it being put to such use, but we are powerless to protect ourselves.

Both the railroads and the automobile-gasoline-tire-cement, etc., industries are our advertisers. For every dollar we get from the railroads, we get fifty or more from the latter. We represent neither, however.

If we represent any one, it is the public. The public has some legitimate grievances against truck abuses and the trucking industry deludes itself if it supposes that all criticism is railroad-planted propaganda.

Sincerely,

WESLEY W. STOUT.

THE SATURDAY EVENING POST.

The Editor of CCJ Answers

Sept. 6, 1939.

DEAR MR. STOUT:

When we wrote you we felt THE POST was a publication jealous of its reputation and that, as such, it would welcome fact-supported criticism of an article which reflected upon its fairness. We had no idea that honest criticism, frankly stated, would be resented and would provoke personal rudeness.

We were not quarreling with your knowledge of trucks nor with your nocturnal reactions to a few trucks that



● Autopulse is sold and serviced by the best houses in the trade, is used by leading cost-smart operators, and has been in the field over 10 years . . . you don't have to guess.

No Sir!

—there's no longer any reason you men responsible for interrupted schedules should be "on the spot." You can avoid trouble by calling for Autopulse, as thousands of others have done. Autopulse, mounted away from the motor, PUSHES COOL FUEL in a solid stream—eliminating vapor lock, fuel waste, hard starting, and all other fuel feed troubles.



INSTALLATION IS SIMPLE AND EASY

ALONE

Mount in cool convenient spot along fuel line, below carburetor, and close to fuel tank as possible so fuel is mainly pushed.

PARALLEL

Operates perfectly as auxiliary to cam pump—cutting in automatically when cam pump needs help; otherwise lies idle. No cut-off valves needed.

SERIES

Both pumps work all the time. Not so good as parallel hook-up, but often a convenient and effective vapor-lock remedy.

WITH TWIN TANKS

Connect twin tanks with one line looped for flexibility; fuel will feed evenly from both. Keep Autopulse below the carburetor always.

Don't wait for failures—prevent them! The cost is surprisingly low. Ask us about our...



Liberal TRADE-IN

offer. Take advantage of this saving—MODERNIZE your fuel supply equipment NOW!

AUTOPULSE

ELECTRIC FUEL PUMP

AUTOPULSE CORP. 2821 BROOKLYN AVE., DETROIT, MICH.

disturb the peace and quiet of your country home. We were disputing published statements, premises and analyses erroneously presented to your millions of readers as fair and accurate.

Nor did we mean to insinuate that the article was a piece of railroad-planted propaganda. We granted, although your personal attitude now makes it seem like an illusion, that THE POST must have been motivated by a spirit of scrupulous fairness.

We did say that the article was an amazing exhibition of inept editing. Your letter has not dispelled the validity of that assertion.

Sincerely,

COMMERCIAL CAR JOURNAL,

George T. Hook, Editor.

Bulletin

As late as Sept. 20, THE POST had not forwarded its author's defense of published statements. If and when the defense is received it will be presented in these columns.

POOL

(CONTINUED FROM PAGE 32)

is strictly an educational enterprise.

We meet in the large assembly room of one of the local automotive electrical supply houses. This firm gives us this room free of rent. No merchandise is displayed in the room; no attempt is made to commercialize this cooperation. The other jobbing and manufacturing concerns have representatives attend these meetings and they, too, cooperate in every way possible. And now, we have a number of fleet owners who also attend these meetings to sit in and learn more about fleet operation and the problems their superintendents must face daily.

Our average attendance is from 50 to 60 people, usually about 40 members and the others are fleet owners, factory representatives, etc.

Our meetings have covered most all phases of fleet maintenance. Such subjects as generator, starter, voltage regulation, and other electrical problems; proper lubricating; governors and their uses; proper application and care of batteries; application and care of tires; clutch assemblies; welding and body work; and other topics have been covered. We plan our programs rather carefully. For

example, every speaker must present a brief outline of his subject or a preview of any motion picture to be shown the membership of the association to the president of this organization for approval. No advertising or plugging for any line of merchandise is permitted.

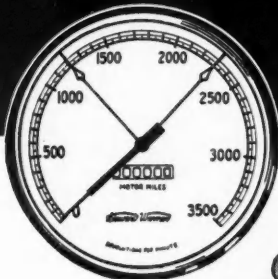
We do have factory or jobbing representatives to appear on program, but when we do, we try to plan a series of two or three such programs. For example, if an automotive electrical engineer appears on

a program with a talk and motion picture covering electrical trouble shooting, this speaker covers the subject rather thoroughly. But just to insure that we have the benefit of all data and research on the subject, we try to follow up with the next meeting covering the same or a similar subject from the representative of a competitive factory.

These programs are educational and create much interest. The members are invited to speak out and ask
(TURN TO PAGE 70, PLEASE)

... KNOW HOW FAR YOUR MOTOR RUNS!

CUT FUEL, OIL, REPAIR BILLS AS MUCH AS 25% BY KNOWING INSTEAD OF GUESSING



Amazing New Motor Mile Tachometer Records Actual Miles Your Motor Runs!

WHEN a truck takes a long hill in low gear, the motor is piling up many more miles than the speedometer shows. When a driver leaves the motor idling during a stop, it's adding up "motor miles" which are never recorded. If you service that truck on a basis of speedometer miles, you're inviting premature wear and needless repair bills.

Now, for the first time, you can keep track of motor miles—know how far the motor runs—and service it accordingly. The amazing new Stewart-Warner Motor Mile Tachometer records motor mileage whenever the motor is turning, regardless of truck travel.

More than that, this utterly new kind

of tachometer shows your driver the ECONOMY RANGE of motor speed—the space on the dial where the tachometer needle should be for economical operation. This feature alone can cut your fuel and oil bills as much as 25% or more. The two red pointers on the dial are permanently set at the points which mark the upper and lower limits of the ECONOMY RANGE for the particular truck on which the instrument is installed. It frees you from the terrific penalties exacted by overspeeding or "lugging."

Get all the details about this new method of truck operation, and learn how much it can save you in a year! Mail the coupon!

STEWART WARNER MOTOR MILE TACHOMETER

STEWART-WARNER CORPORATION
1876 Diversey Parkway • Chicago, Ill.

STEWART-WARNER CORPORATION Dept. J
1876 Diversey Parkway, Chicago, Illinois

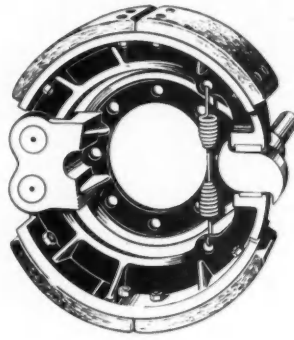
I am operating.....trucks. Please tell me how the Stewart-Warner Motor Mile Tachometer can cut my fuel, gas, and repair expense.

Name.....

Address.....

City.....State.....

Firm Name.....



READ THIS STATEMENT ON SHULER BRAKES!

No matter what brakes you are now buying
—no matter how *good*, or how *inexpensive*
—Shuler still offers you either

- (1) *Better* brakes at no greater cost, or
- (2) *Equal* brakes at less cost.

Yes, that's a big promise for any manufacturer to make. But it is a promise on which we can make good—a promise on which

we *have* made good in literally dozens and dozens of cases.

On the strength of sheer merit alone, Shuler Brakes are rapidly displacing many of the brakes that you have always called "the best." Won't you give us a chance to *improve* your standards, or to cut your costs? Write us *today!*

SHULER AXLE CO., Incorporated, LOUISVILLE, KY.

Detroit Office: General Motors Building

Export Division: 38 Pearl Street, New York, N. Y.

West Coast Warehouse: 440 Golden Gate Ave., San Francisco, Cal.

SHULER AXLES AND BRAKES

**BETTER
SERVICE
ON
"SPECIALS"**

Many of Shuler's best customers were first won by our eagerness to be helpful in emergencies — such as in rapidly getting out troublesome "specials" and small orders. We invite you to test our cooperativeness on any of our products:
Shuler Tubular Trailer Axles
Shuler Square Trailer Axles

Shuler I-Beam Trailer Axles for Utility or House Trainers
Shuler Front Axles for Trucks, Tractors, Farm Machinery, etc.
Shuler Truck and Trailer Brakes
Shuler Heavy-Duty Brakes and Trunnion Axles for Low-Platform Heavy-Duty Trailers
Custom Forgings

When writing to advertisers please mention Commercial Car Journal

COMMERCIAL CAR JOURNAL
OCTOBER, 1939



● *More miles—safer miles for every dollar you invest—that's the story of WEED American Bar-Reinforced Tire Chains.*

Double-welded Bar-Reinforcements on the cross chains provide twice the metal to wear through. They effectively stop *both* forward and side skid. Weedalloy, the metal used in WEED Americans, is unusually tough and wear-resisting, especially developed for tire chain use. Side chains are welded and case-hardened—another assurance of long mileage.

Standardize on WEED American Bar-Reinforced Tire Chains and cut your per-mile chain costs.

AMERICAN CHAIN & CABLE COMPANY, Inc.
BRIDGEPORT, CONNECTICUT

IN BUSINESS FOR YOUR SAFETY



**SEND FOR
FREE CHART**

Actual road tests prove that from 25% to 50% can be added to chain mileage by proper installation. Send for free chart that shows how to apply chains so that all cross chains get equal wear.

WEED

**WEED American
Bar-Reinforced
TIRE CHAINS**

(CONTINUED FROM PAGE 67)
 questions and usually these problems are solved right in our meetings class-room fashion. For instance, A. R. Cooper, fleet superintendent for the Core Drilling Co., operator of large fleets as well as stationary engines in several Southwestern states, had been having considerable unnecessary spark plug failures. Although this superintendent had been operating fleets for years, he had not been able to place his finger on the trouble. During a lecture illustrated

by a factory motion picture, this superintendent obtained some ideas. Then some illustrated literature was furnished and he has made a large saving in the cost of spark plugs as well as showing much greater gasoline efficiency. The president of this big company operating many fleets has personally visited our meetings, and after finding his superintendent to be a regular member who had reduced operating cost because of his serious work and study, this employer announced publicly that his

superintendent would be reimbursed for his membership dues and all future dues would be paid by the company.

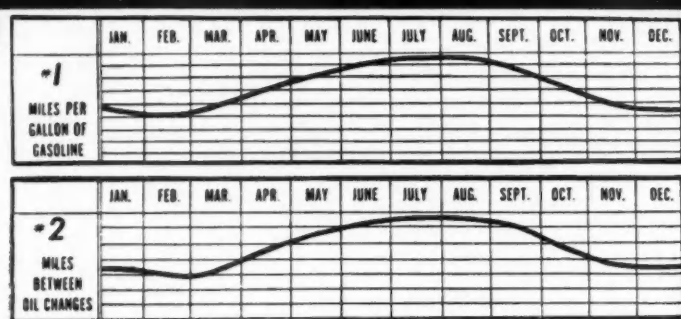
We plan our meetings so that two will be devoted to lectures and demonstrations with outsiders helping to conduct the program. But every third meeting is devoted to round-table discussions only among members. In these meetings, we bring up actual operating cases and analyze the problems, add our personal experiences, and then report back.

These round-table discussions have saved Houston fleet owners much money, and we have contributed valuable information to manufacturers and their representatives. For example, a truck manufacturer with a splendid reputation had a certain model out that gave a lot of bearing failures. Instead of each member feeling that he had merely had bad luck with his fleet, we found that several members were having the same trouble . . . one man had three trucks with bearing failures at 5000 miles and less. The replacement bearings also went bad in 5000 miles and less. The fleet owner was dissatisfied; he was of the opinion that his superintendent did not know his business.

But when these same failures began showing up in several fleets, we invited in a factory representative of this truck concern; then we obtained all the information possible from the truck company and from leading bearing manufacturers. We found that in this particular model truck, there was an egg shape condition in the main bearing brackets. We had complete bearing alignment equipment at this meeting; and we reconditioned a block right at the meeting. We used micrometer measurements to be exact, showing this truck representative the egg-shaped condition in a practically new block. After reconditioning this block, and the others similarly affected, there have been no more bearing failures in these trucks. Now this is an instance of where the factory did not know something was wrong. Any complaint they may have received was an isolated one. But when the association dug up the facts, the factory had the information from a number of fleet owners and immediately set things in motion to correct the trouble.

As many of us have not had all
 (TURN TO PAGE 72, PLEASE)

Every TRUCK OWNER WILL PROFIT FROM THESE CHARTS



1. The first chart shows the influence of summer temperatures upon gasoline mileage of many trucks, and indicates a definite increase in miles per gallon in summer over winter. A Pines Radiator Shutter enables the operator to maintain summer temperature under the hood regardless of outside weather.

2. The second chart shows how the mileage between oil changes is increased for many trucks in summer over winter. Summer under-hood temperatures (always available with a Pines Radiator Shutter) assure quicker lubrication, more complete combustion, less water condensation in crankcase, less foreign matter in the oil, fewer oil changes.

If You Are Adding Any of These Trucks to Your Fleet This Year

✓ Divco
 ✓ Dodge
 ✓ Ford

✓ General Motors Truck
 ✓ International Harvester
 ✓ Mack

✓ Sterling
 ✓ Studebaker
 ✓ White

**NOW — You Can Get
Dependable Radiator Shutters
 That Give Summer Conditions
 under the Hood—All Year 'Round**

Write quickly for complete information on Radiator
 Shutters for trucks you are now considering.

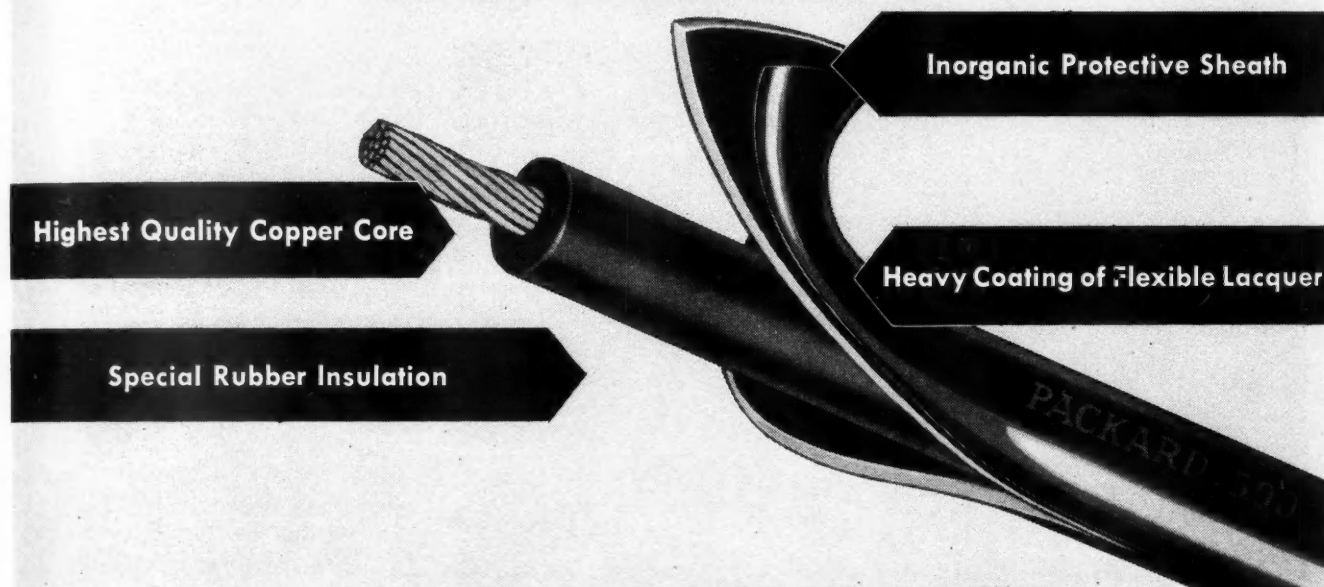
PINES WINTERFRONT CO.

4800 W. DIVISION ST.

CHICAGO, ILLINOIS

NO OTHER CABLE CAN TOUCH IT FOR HEAVY-DUTY SERVICE

THE NEW *Packard* 500
REG. U.S. PAT. OFF.
TRADE MARK



There's no mystery or ballyhoo about the superior characteristics that make Packard FIVE-HUNDRED the new cable leader for heavy-duty service. It's as simple as this: Packard FIVE-HUNDRED combines all the best qualities of both Packard 440 (inorganic sheath) cable and Packard lacquered cable. The inorganic sheath gives it great resistance to oil and moisture, the two forces which deteriorate braided cables; the lacquer coating increases its dielectric strength, resistance to corona, dry heat and abrasion, and makes it easier to install.

The real trick was to find some way to apply a lacquer coating to the tough inorganic sheath that

has made Packard 440 first choice for replacement among fleet operators. Now this problem has been solved, and the result is a cable that has *all* the desired characteristics that make for longer, more satisfactory service.

Operators and maintenance men who have discovered the greater economy provided by Packard 440 cable, are asked to try Packard FIVE-HUNDRED for even better results. Those who have had trouble finding a cable to meet their requirements will find the answer in Packard FIVE-HUNDRED . . . the cable with *all* the desired characteristics. Write for Bulletin J.S. 33, Packard Electric Division, General Motors Corporation, Warren, Ohio.

TRY PACKARD FIVE-HUNDRED
ON YOUR TOUGHEST RUNS. IT
WILL CONVINCE YOU!

Packard
REG. U.S. PAT. OFF.
TRADE MARK

THE STANDARD WIRING EQUIPMENT OF THE AUTOMOTIVE INDUSTRY

(CONTINUED FROM PAGE 70)

the educational advantages in early life, members of our association find that repetition is worth while. We try to rotate subjects so that the same subject after running its course will come up again in 8 or 9 months. We are able to grasp some of the points when first presented; then as it is repeated, we not only get the newest developments that have taken place since the last time the subject was treated, but we also get a review of the old principles.

Although we may think we know many things about the everyday maintenance matters, we all benefit from the technical and practical data that is furnished. For example, one recent meeting was devoted to lubricants by a lubricating engineer who presented a motion picture film to show the various lubricants and their viscosity for each type of operation. This film showed cut-away motors, illustrated the results of right and wrong lubrication . . . different oils are required for heavy duty work,

local start and stop work, high speed running, etc. The subject of tires and proper sizes for every job was handled by a tire man with motion pictures covering the subject. This lecture and demonstration proved how over- or under-inflation is harmful to the spring shackles and other operations of the commercial car as well as injurious to the tire in question.

We have had battery men present comparisons and show us with actual batteries, records, etc., why it is a better investment to buy heavy-duty batteries instead of the cheaper competitive lines. We have had representatives demonstrate and show us how to use our analyzing equipment, and other tools and equipment that many of us have.

One thing our association has done for the benefit of the fleet owners is to do away almost entirely with the high-pressure salesmen who used to sell us equipment and articles of doubtful merit. Although we have no rule governing the buying of any article by any member, and we do no collective buying, our members have learned that when something new or something they do not understand is offered that the best thing to do is to invite the representative to let us examine it at the next association meeting. We permit no soliciting or order taking at a meeting; but if some member wishes to investigate any article at a meeting, the membership will do so, and usually it is only the men with merchandise of merit who will show up to have his idea or his equipment diagnosed by the membership. And one other advantage, when any member does buy something new, all the members do not have to make an equal investment to find out the results. We pass along the results to the membership and we can all profit by one member's experience.

As for the benefits received by the fleet superintendents, we have already had several men receive salary increases. One man has gone to a better paying job. We don't encourage change in position, and if a man is discharged, we investigate the discharge from both sides. If the man was discharged for being a rum-head or something of this sort, he is not permitted to remain in the association. If he loses his job through no

(TURN TO PAGE 74, PLEASE)

For Tough Service It's GATKE Custom-Bilt Sets





Service Proved
for every type
of motor vehicle

● Tough service quickly demonstrates the many qualities that make GATKE Custom-Bilt Sets first choice for every type of fleet.

Uniform holding power, despite high temperatures. No fading on long grades or with frequent stops. Smooth, quiet braking regardless of temperature or weather. Longer service with fewer adjustments. Minimized drum wear for lower maintenance.

Use GATKE Custom-Bilt Sets on your toughest schedules. They'll show you performance that means safety with lower cost. Ask your GATKE Jobber or write us.



BRAKE LINERS & BLOCKS

GATKE CORPORATION 228 N. La Salle St.,
CHICAGO, ILL.

BASICALLY DIFFERENT LUBRICATING OIL

REMOVES CARBON; has
STRONGER NATURAL FILM



NEW TYPE OILS RESTORE POWER AND SAVE FUEL BY REMOVING
HARD CARBON:—STRONGER NATURAL PROTECTIVE FILMS SAVE WEAR

Month after month fleet records reveal the money-saving properties of Lion Naturalube. These fleet records prove that when using Lion Naturalube fewer lay-ups for engine overhauls are necessary—power is conserved—fuel saved.

Lion Naturalube's basically different characteristics: the ability to gradually remove hard carbon from pistons, rings, valves, and spark plugs and a stronger natural protective film are enabling many fleets to improve performance records.

With Lion Naturalube in the crankcase rings, valves and spark plugs are kept clean of hard carbon and can function properly. Thus power is conserved and fuel saved. Furthermore, Lion Naturalube's stronger protective film will reduce "drag" and lessen wear.

For top-notch performance at a savings, switch to Lion Naturalube Motor Oil or Lion Naturalube Diesel Engine Oil.

For visible and understandable proof of Naturalube's money-saving features and details of money-back guarantee, phone or write the nearest Naturalube distributor or write Lion Oil Refining Company, El Dorado, Arkansas.

LION OIL REFINING CO.
El Dorado, Arkansas



(CONTINUED FROM PAGE 72)
 fault of his own, we help him find a new position; but one of our biggest problems is satisfying the demand for superintendents who are members of our organization.

The biggest advantage we have received so far is recognition from our bosses. These men see that we are seeking to improve ourselves and our work—they are more tolerant, willing to give us some time to study and investigate the new ideas in fleet maintenance, and more of the bosses

are more willing to buy precision equipment, tune-up and analyzing equipment and other tools necessary to do the right job on modern-day high-speed motors.

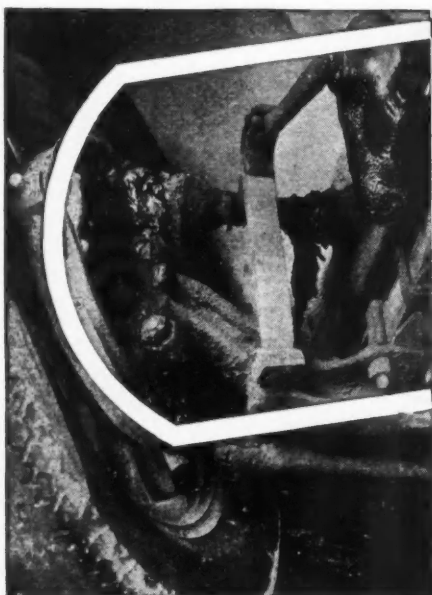
We have improved our own conditions in many ways as fleet superintendents; we have elevated our profession and our efforts in the eyes of our employers; and we have improved efficiency and safety and have lowered cost in many of our fleets. But our efforts as a local organization can be carried yet farther when

other cities will form similar units, or band together in a national organization. With a number of maintenance associations, we can do more research and more work to form regular circuits for our films, literature, lectures and other educational data that can be shared by all.

METHOD

(CONTINUED FROM PAGE 21)

DIRT...



**HYPRESSURE JENNY
 STEAM CLEANING RE-
 MOVES DIRT QUICKLY,
 EASILY, ECONOMICALLY**



**STEALS
 UP TO 400
 LBS. OF YOUR
 PAY LOAD!**

There's plenty of evidence to prove that DIRT may add 50 to 400 pounds of dead weight to every load you carry... if allowed to accumulate on bodies, fenders and chassis of trucks or trailers. Hypressure Jenny Steam Cleaning will quickly rid you of this costly "free passenger." It will "up" your PAYLOAD and reduce your fleet maintenance costs 25 to 40%. With HYPRESSURE JENNY on the job, cleaning work that formerly took hours may be completed in minutes—inspection and repair work is speeded and JENNY keeps 'em rolling at lower costs. Ask us to prove it. Return the coupon today for a survey of possible savings to you. No obligation.

HOMESTEAD VALVE MFG. COMPANY

P. O. Box 90

Coraopolis, Pa.

Go ahead—tell us how and how much JENNY can save us

We have.....men employed in maintenance.

We repair.....trucks monthly.

We repaint.....trucks monthly.

We clean.....sq. ft. garage floor monthly.

We want to clean.....

Name

Address

kinked but hangs in an easy U which allows the full capacity use of the hose.

This not only has eliminated the possibility of hose kinking, but also has entirely removed the coiled spring generally used to suspend the hose, a common offender in scratching up the front of the trailer. When the springs became rusted they didn't add to the appearance of the outfit, and often would break or pull out at the end when the trailer was jack-knifing. Also the coil of the hose would often drop down and get caught on the drive shaft or some other part of the unit. This usually demanded a 10-ft. supply of new hose, at anywhere from 22 to 41 cents a foot, not to mention the cost of the delay of the equipment and the labor for the hose replacement. Since the installation of these new extension pipes we haven't had a single hose damaged in this manner.

Still another saving has been through the fact that the hose, continually sliding back and forth across or through the spring, was soon worn out—first through the rubber surface and then into the fabric. The life of such a hose was from 18 months to two years. In contrast, some of our first hose-lifting installations have been in use for about a year and show no wear at any point, indicating that such hose now will last indefinitely.

Improvements in Lighting Cables

What was good for the hose seemed to us good also for the electric light cable, which we now run in a third pipe between the air hose pipes on both tractor and trailer. (See Fig. 2.) Before we started this change, our trailer light connections were as

(TURN TO PAGE 76, PLEASE)

EXTRA POWER AND ECONOMY

when engines
are equipped with

LYNITE ^{*}T-SLOT

LO-EX

REG. U. S. PAT. OFF.

PISTONS



REG. T. M., ALUMINUM COMPANY OF AMERICA



Lynite T-Slot LO-EX Pistons are important contributors to the finer performance of an engine. And to greater fuel and oil economy, and longer engine life. Their lighter weight reduces bearing pressures, so bearings

last longer. They have low coefficient of expansion, permit close clearances, give maximum heat flow. There's less formation of carbon. ALUMINUM COMPANY OF AMERICA, 1916 Gulf Building, Pittsburgh, Pennsylvania.



LYNITE LO-EX PISTONS — A PRODUCT OF
ALCOA · ALUMINUM
CAST ONLY BY ALUMINUM COMPANY OF AMERICA

(CONTINUED FROM PAGE 74)
varied as the total number of our different makes of tractors and trailers (now being standardized into two makes of tractors and one make of trailer). To get our marker lights to burn properly has cost us a large amount of money, in time spent trying to figure out "where the wires run." When we used the fifth wheel for a ground, many hours were spent trying to get lights. . . . The exact amount of such time I doubt if I would tell even if I knew, because

the Boss might see this article!

The third pipe, and the additional use of a 6-wire electric cable has just about eliminated our former costly light-repair job; in fact we haven't had such a job in the last four months. The 6-wire cable cost us 16 cents a foot in quantity and it takes 10 ft. for a job. The wires in the cable are all identified by color. We use one for a direct ground to the tractor which eliminates ground troubles. Two wires are used for the turn signals. One is used for the

stop light and the other for the side marker light and the tail light. The extra wire has proved convenient for emergency, to be used in case trouble should develop in any one of the five in use.

The 6-wire cable from the female plug ends in a regular electric fixture box, exceptionally long and large enough to allow easier splicing and packing in of the spliced ends. A chart showing the color scheme is in the shop, which makes it easy to trace the trouble if a repair should be necessary. A six-contact connector is used, the female portion being on the trailer and the male at the end of the 6-wire cable running from the tractor.

Previous to the pipe installation we had a cable with a male connection on each end and a female connection on both tractor and trailer. As the connections cost \$3.00 each, the elimination of one more than pays for the pipe used.

The 6-wire cable, when it leaves the lower end of the pipe on the tractor, is run through standard B.X. up to a fuse and multiple connecting block. This not only eliminates the wearing through of the rubber covering, but if a short should develop there is no danger of a fire starting in this part or in the part enclosed in the pipes. The separate wires in the trailer are the best grade we can obtain, which has proved cheapest in the long run.

Three-Way Gas-Tank Valve

The idea of a three-way gas-tank valve with an indicator on the handle was that of our chief mechanic, Sanford Lawler. It is used to show which of the three tractor gas tanks is being drawn from at any particular time. The first such valve that we used had to be made up special for us, as we couldn't find one on the market. Now one of the largest tractor manufacturers has such valves as standard equipment.

The idea developed as the result of the trouble drivers were having when they happened to change from their regular tractors. Often, when out on the road, a driver would have to telephone in to find out how to turn on another tank of gas. Our operation includes some contract tractors, and previous to the time that we required the use of this new (TURN TO PAGE 78, PLEASE)

Now HEAVY DUTY *Slam-tite* LOCK for PANEL BODIES



*new rugged
design
improved
construction
easier
installation*

The outstanding success of the Eberhard SLAM-TITE lock for lighter panel bodies has led to the production of a Heavy Duty SLAM-TITE for heavier bodies also.

Now it is ready for you—with a new Corbin locking device that can be opened from the inside and ample sturdiness for the heaviest panel body doors. Or you can get it plain without the key lock.

All other features that have made the Eberhard SLAM-TITE design famous are also included. Ask for No. 5606, complete with Corbin lock and finger latch, as shown; or No. 5609, without Corbin lock.

Write for complete details and prices or see your dealer.

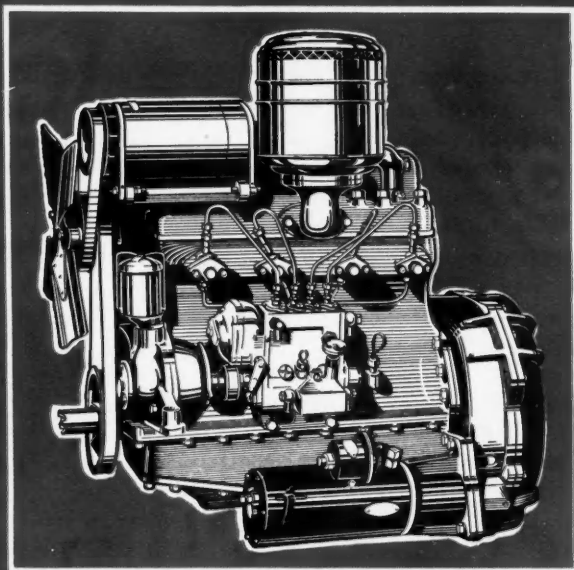
Eberhard Manufacturing Company
Division of the Eastern Malleable Iron Co.
Cleveland, Ohio

EBERHARD *Long Run*
TRUCK BODY FITTINGS
Send for Complete Catalog



HERCULES DIESEL

Replacement Engines
for **FORD
TRUCKS**



Open Wide the Door to **BIGGER PROFITS**

FOR owners whose trucks average 50,000 miles per year or more, there is no surer way to make money than by installing Hercules Diesel Engines in Ford Truck chasses. The fuel savings effected are *real savings!* They run into figures that soon liquidate the extra investment in power equipment.

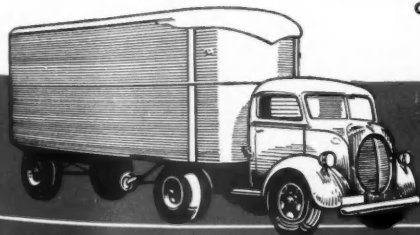
The reasons for this are, of course, that Diesel fuel costs less, and goes farther, than the cheapest gasoline available. In addition, the Hercules Diesel Engine represents modern Diesel power at its best. It gives to the truck owner the outstanding benefits of Diesel operation in fullest possible measure.

More miles from every gallon of fuel and more gallons for every fuel dollar—plus even power, ample speed, easy handling and rugged reliability. It's what thousands of truck owners have long been waiting for—and as the big news of Hercules' achievement spreads from city to city, and state to state, more and more Hercules Diesel-equipped Ford Trucks go into service on the highways of the nation.

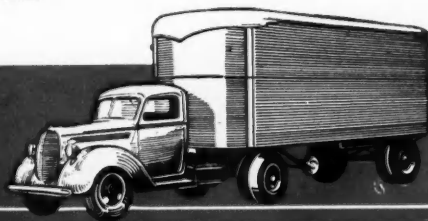
A PROVEN ENGINE -- OF CUSTOM QUALITY

The Hercules Diesel Engine which is the standardized replacement for Ford Trucks—and which is marketed in a complete "Power Package"—is fully representative of the finest traditions of Hercules craftsmanship. It operates smoothly and quietly—with a clean exhaust. It is as easy to control and service as a gasoline engine. It is simple, powerful, dependable—the identical engine used by Ford Motor Company in chasses for export shipment.

Write today for name of nearest distributor—typical performance records as given to us by owners—and full information as to installation.



For CAB-OVER-ENGINE and
CONVENTIONAL MODEL
FORD TRUCKS



HERCULES MOTORS CORPORATION

193 11th Street, S. W., CANTON, OHIO

(CONTINUED FROM PAGE 76)

valve every gas-tank hook-up was somebody's individual idea. Valves were located in every conceivable place and our city drivers often were unable to work out the right combination, often necessitating the sending of a mechanic to their aid. The new three-way valve has entirely eliminated this trouble. The valve is placed to the right of the driver down at the edge of the seat where he can switch tanks while driving. This saves time and trouble. It is

also a safety measure, since I know of serious accidents that have happened when the driver was obliged to stop his truck on the highway to switch his gas tank.

Better Fifth-Wheel Mounting

Because several of our tractor chassis had been sprung and cracked in front of the fifth-wheel mounting, we began to strengthen this part by the use of an oak plank fitted into the chassis and extending from the rear of the frame almost even with

the rear of the cab. This not only has eliminated the weakness in the chassis but also has made possible a much better fifth-wheel mounting.

We now can use $\frac{3}{4}$ in. U-bolts to extend up through the fifth-wheel base plate and around the chassis frame. Before putting in the oak timber, when these U-bolts were tightened they would bend the steel frame and the terrific jerking on the fifth wheel and the bolts would continue to bend the frame still more, so it was impossible to keep these bolts tight. The old set-up required the bolting of the base plate of the fifth wheel to the chassis direct. This meant that the chassis was acting much as a shear on the bolt, and either the bolt or the chassis would wear. Once a little play had developed there was great danger of a serious accident. Since developing the new method we have not bent a single tractor frame and we rarely find a fifth-wheel which has started to loosen; and when such a loosening is found it is easily corrected.

Improved Trailer "Tarp" Frame

The use of a light new iron frame (see Fig. 3) which we have developed in the shop has cut almost to nil the former damage to freight caused by the bellying of tarps and the collecting and leaking of water. The frame includes a ridge pole made of $1\frac{1}{4}$ -in. iron pipe, with the ends so curved that when they are fastened to the ends of the trailer the central ridge pipe is about 2 ft. 8 in. higher than the parallel sides of the trailer. To support the side tarp roofing, four cross bows of half-inch iron rods are so notched at the top that they will remain in contact with the central ridge pole. Also, they are so bent at the ends that these ends can be fitted into receptacles at opposite sides of the top of the trailer box. This gives the tarp pitch enough to drain, and the supports also prevent the formation of basins that would hold water.

The frame thus is made up of individual parts so light and easily handled that one man in a pinch can put it in place. This improvement was worked out because in our operation we haul considerable steel, which necessitates taking off the tarp so that the steel can be loaded by crane.

We found that the bows provided
(TURN TO PAGE 80, PLEASE)



Rusted nuts and bolts on the heaviest truck get "pushed around" like weaklings when No. "50" tackles the job. This heavy duty Set has 10 "supersockets" with 12-point openings, $1\frac{1}{16}$ to $1\frac{3}{4}$ ", and the Drivers for every desirable combination. 15 pieces all told, in a strong steel case. If you want to see "action" in your shop—put 50 to work! Your jobber has this time-saving, money-saving Set. Ask him about it—ask him for it—or write us for special circular.

There's a complete booklet, too, of Williams line including all types of wrenches, pliers, screw drivers, chisels and punches. We'll be glad to send you one.

J. H. WILLIAMS & CO.

225 Lafayette St. New York
Western Warehouse and Sales
Office: Chicago. Works: Buffalo

WILLIAMS
SUPERIOR DROP-FORGED TOOLS
SUPERSOCKETS • SUPERRENCHES

TRAILMOBILE

- It takes the strength of Trailmobile design and construction to make a sturdy trailer that can take it—stand up under the punishment of loads and roads, day after day, and stay out of the repair shop. It will pay you in actual dollars to know the details of Trailmobile load proportioned frame, fully enclosed prop screw, cradled spring suspension, safety brakes—all the extra features that Trailmobile gives you to assure economical and SAFE operation. May we send you these details?



The Trailmobile Safety Trophy will be awarded for the first time at the ATA Convention in Chicago October 23. You may enter this contest by making application to ATA, Washington, D. C.



THE TRAILER COMPANY OF AMERICA, CINCINNATI, OHIO

(CONTINUED FROM PAGE 78)

by trailer manufacturers, being made of wood reinforced with iron, were too heavy and complicated for one man to handle. Also, the type of frame with slats running the full length of the trailer was continually being broken while being taken out or put in. Tarps often were torn by the broken ends pushing through, causing leaks. If the slats were left out entirely, rain and snow would fill the bellied-down portions of the tarp and cause leaking damage to the

freight. Here again it would be impossible to give exact figures on savings from this change, but it doubtless would amount at least to several hundred dollars a year.

Mounted Box for Trailer Papers

We had paid several fines for not having State Utilities or Public Service Commission cards available when called for by officials making highway inspections, the driver having forgotten to take the proper cards after switching trailers. We have elimi-

nated this trouble by attaching to each trailer a small shallow galvanized container (see Fig. 4) which will hold and protect all cards pertaining to the trailer, and keep such cards always there. It cost us 50 cents each to have such containers made; and since having them installed on our trailers, which are being switched about continuously, we haven't contributed anything to a J.P. because of the lack of such permits. The box has a simple slip-over easily fastened or locked in place, affording full protection from weather, grease, dust or mud.

To protect our drivers from possible injury, as well as our trailers, and the goods being freighted, we have reinforced the fronts of all our trailers which may be used for heavy loadings with steel plates. (See Fig. 5.) The plates extend part way to the top, are seconds and discards gotten at the steel mills for practically nothing. Thus, steel bars, pipes, etc., are prevented from going through the nose of the trailer if a sudden emergency stop should shift the load forward. Up-to-date no trailer has been damaged from this cause, although many of the plates show signs of having been hit hard.

All our tractors are equipped with a tip-over, or so-called "crash" device. Whether we have saved any fires is impossible of proof. However, this fact remains. Since putting them on three years ago we haven't had a single fire resulting from tipping over. Call it luck or whatever you will, but we will continue to use them.

We have cut the cost of lettering a tractor and trailer from twenty dollars to six dollars by using a perforated stencil cut for our needs then having one of the shop men do the lettering. The stencil is of the type which is dusted with calk powder which forms the outline of the letters. By changing to this method all our lettering has been standardized which improves the looks of the fleet.

Lack of grease, as everyone knows, is the quickest way to wear out machinery or any moving part. One of our new shop methods is to hire a competent man then make him responsible for all lubricating, oil, and batteries. A record is kept of all work done, and all oil filters, gen-

(TURN TO PAGE 82, PLEASE)

Yes! Governor Also Means Safety

The little transfer shown below will serve notice on all traffic that your trucks are being safely operated. Thousands of these transfers have already gone out. Have you asked for yours? Call our distributor or write direct to us.

Everybody knows that Handy Governor pays for itself many times over by making motor, tires, and brakes last far longer. But that's only part of the story.

Every Handy pays another big dividend BY PREVENTING ACCIDENTS.

Most bad accidents are caused by overspeeding, and overspeeding simply can't be done with a Handy-Governed truck.

Are you interested, Mr. Fleet Boss, in the safe operation of your trucks? A Handy Governor on every vehicle will be your biggest helper toward safety records not otherwise possible.

And have you seen the new Visible Action Handy? It permits your INSTANT INSPECTION.

Just ask your friend, the Handy Distributor!

HANDY GOVERNOR Division

King-Seeley Corporation

Ann Arbor, Michigan

World's Largest Builder of Automotive Governors



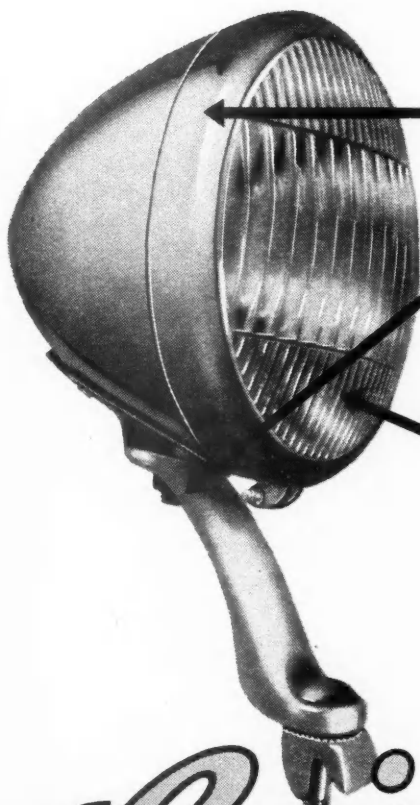
When writing to advertisers please mention Commercial Car Journal

COMMERCIAL CAR JOURNAL
OCTOBER, 1939

DEPENDABILITY and PERFORMANCE ARE "BUILT-IN" FEATURES OF GUIDE FOG LAMPS

Millions of miles of scheduled service—thousands of satisfied users—have proved the dependability, long life and outstanding performance of Guide Fog Lamps. Wherever scheduled buses and trucks must operate in *all* weather conditions—there you will find that Guide Fog Lamps are "specified" equipment. Designed and built to give the best possible service, even under hard usage, your Guide Fog Lamp will always do its part in getting your equipment through—easing the strain on your night-run drivers.

Here are some of the outstanding features of the Guide Fog Lamp that mean long life, dependability and outstanding performance to you and your drivers:



The Guide Fog Lamp is of extra-heavy construction. Body and door are both heavily chrome-plated, and the strong mounting bracket has a rust-protective aluminum finish.

A 360° rotation of the lamp body is possible by means of the special mounting bracket. Permitting almost any mounting position of the lamp, even inverted if desired, this feature means that the lamp can be mounted away from interference with bumper brackets, radiator grille and other obstacles to the light beam.

The combination of the silver-plated mirror reflector and amber lens projects a powerful, penetrating beam. The method of mounting the lens in the lamp door makes it less subject to breakage, and access to the reflector and bulb is made easy. The Guide Fog Lamp is furnished complete with bracket, switch, extra-long weatherproof cable and full installation data.

Guide
LAMP

Division of General Motors Corporation
Anderson, Indiana



All Guide Lamp parts are available through the nationwide distribution system of United Motors Service. Guide Driving

Lamps, Marker Lamps, Reflecting Signals and Directional Signals—especially built to meet truck and bus requirements—are also available from Guide Lamp distributors or United Motors Service branches.

(CONTINUED FROM PAGE 80)
erators, etc., are checked and greased from these records. Generator brushes are also checked. The greasing of equipment is a dirty job, and while this is being done the greaseman is made responsible also for oiling the generators, a trick which has eliminated a good many former road failures.

New Tire Checking Methods

Because tire cost is such a large item in fleet management, probably

a larger saving in dollars and cents can be made here than in any other department or practice. It is surprising the number of fleets that leave the care of tires entirely in the hands of the driver.

One of the first things we discovered, when we first started in earnest on the tire problem, was that we definitely had been using the wrong tread design for our type of operation. Our tire salesman, and in fact most tire companies, had been selling us tires without much thought to

tread design. We had been buying tires with a tread design that cupped badly. Our routes are over smooth cement highways where traction, 95 per cent of the time, is almost ideal. Yet our tires had a design built for dirt roads, that present a serious problem whenever it rains.

Next we became aware that the driver wasn't the man to saddle with the tire care. We started a program to keep our tires matched up for equal tire wear, and soon found that tires don't wear down equally on all wheels. This meant that we must take the tires from two, three, and sometimes four different outfits and juggle them around to get pairs of the same height for the dual wheels. If the driver was to be made fully responsible he would have to go around making exchanges with other drivers to insure real fits. For more than one reason, this was out of the question.





We now keep a record for individual tires by serial number which shows accurately every mile that a tire runs; and also every wheel position. This has saved us considerable money in getting better adjustments from the tire company. We know how far the tire has run and we can insist on a definite percentage of expected tire mileage. We also have something to go by in determining which make or quality of tire gives the least cost per mile. The claims of the tire salesman don't mean much unless you keep your own record. This is made evident by checking the difference in the mileage of the several makes and listening to the claims of the salesmen.

We break in or season as many tires as we can in the fall, winter and spring. This is done as much as possible by running all new tires on the front wheels for about 7,000 miles. Then they are moved back to the tractor wheels, or put in the stock room if there are no tractor wheels ready for new tires. They stay on the tractor wheels until the tread design is worn smooth and then are recapped. After they are recapped we use them on any wheel.

Our tire record cards are the determining factor in our recapping policy. We began by selecting seven firms that do recapping. Tires from two of the seven recappers produced mileage that definitely proved that it pays to recap. In our test, recapping (TURN TO PAGE 84, PLEASE)

OUTSTANDING Safety Chart.... of the Year PROVES HIGH COST OF SPEED

● This chart which is reproduced by courtesy of the Travelers Insurance Co. does not include the economic cost of accidents which rises in proportion to speed. The table is based on a 1,000 mile journey, average car, average roads, average driver.

MILES PER HOUR	25	35	45	55	65
MILES PER HOUR	MILES PER HOUR	MILES PER HOUR	MILES PER HOUR	MILES PER HOUR	MILES PER HOUR
 OIL	1/2 QT. .13¢	1 QT. .25¢	1 1/4 QTS .43¢	3 QTS .75¢	4 1/2 QTS \$1.13
 GASOLINE	50 GALS. \$8.75	55 GALS. \$9.63	60 GALS. \$10.50	69 GALS. \$12.08	80 GALS. \$14.00
 TIRES	\$1.50	\$3.00	\$4.50	\$7.50	\$10.50
 MAINTENANCE	\$4.00	\$5.00	\$6.60	\$10.00	\$13.00
TOTAL COST	\$14.38	\$17.88	\$22.03	\$30.33	\$38.63
COST PER MILE	1.44¢	1.79¢	2.2¢	3.03¢	3.86¢

OUTSTANDING Performance of

HOOFF "CANTILEVER" GOVERNORS
makes them the outstanding Money Savers!



New Hoof Fuel Economizers Guarantee 5% to 15% Additional Gas Savings

These new Hoof devices for governor equipped Chevrolet (Carter Carburetor) and Ford V-8 (Stromberg Carburetor) limit the use of the power jet to periods of peak load only; insure proper fuel mixture, eliminate cause of hard starting, and engine flooding.

Your Hoof jobber will gladly explain the scores of outstanding features of Hoof Governors which insure outstanding smoother performance, greater savings and lower maintenance cost. Ask him to explain Hoof's exclusive Cantilever spring principle with the exclusive diaphragm control, 3/8" stainless steel shaft, three stainless steel ball bearings, stainless steel butterfly, and other stainless steel parts that eliminate the use of complicated moving parts which cause sticking and corrosion. The locked-in cover makes the governor tamper-proof.

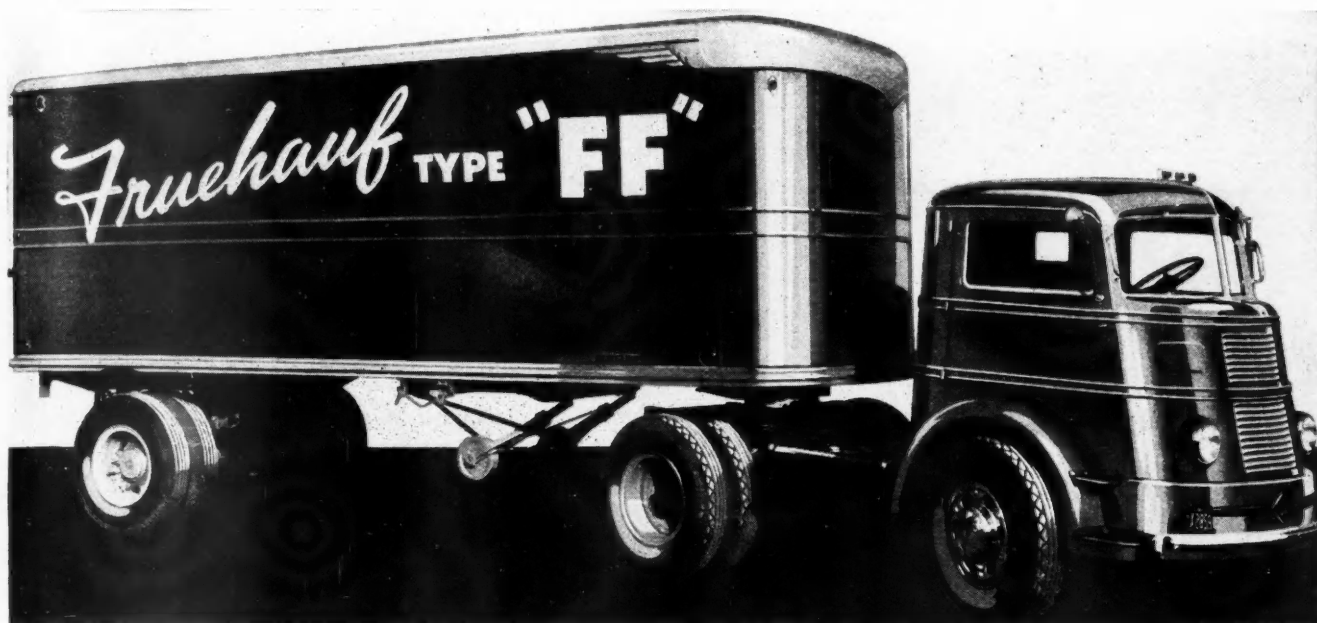
The aluminum body prevents warpage and distortion. Write Hoof for bulletins with complete information on everything a fleet operator ought to know about governors.

HOOFF PRODUCTS COMPANY

Dept. BEC. 6543 S. Laramie Ave.
Chicago, Illinois

New TYPE "FF"

WITH DIFFERENTIAL DUAL WHEELS



THE NEW Type "FF" is an outstanding general-purpose Trailer because it offers: • Nearly a quarter-ton saving in weight (24' length) — due to its frame-integral, tubular strut construction. • Dual Differential Wheels — the Wheels which cut fuel costs 10 to 20%, increase tire life 50 to 100% — as standard equipment. • Easy, economical servicing since built-up sections are stocked for replacement purposes. • Chassis features — such as interlocked spring construction, rubber-mounted radius rods, I-beam axle, and Fruehauf-designed heavy-duty Trailer brakes — which are largely responsible for the long economical life for which Fruehauf Trailers are noted.

You can see this new Trailer at your nearest Fruehauf Branch. Or, if you prefer, the Fruehauf man will gladly arrange a showing at your place of business.

World's Oldest and Largest Manufacturers of Truck-Trailers
FRUEHAUF TRAILER COMPANY • DETROIT
Sales and Service In Principal Cities

ANOTHER NEW PROBLEM-SOLVING PRODUCT **THE FRUEHAUF FLYER**

THE NEW Fruehauf Flyer answers the demand for lower city pick-up and delivery costs; offers the same advantages where feeder lines operate from central terminals to smaller communities.

Designed especially for light, short-wheelbase tractors, it provides small-truck speed and maneuverability—lower-than-truck operating expense per ton-mile.

Its "airplane" construction results in an unusually low weight for easy pulling, while maximum usable body space, plus high net payload capacity (12,000 lbs.), make it ideal for both bulky and moderately heavy merchandise.

And, best of all, the Fruehauf Flyer has the lowest price tag ever attached to a Van-Type Fruehauf! Your nearest Fruehauf representative has all the facts; and he's as near as your telephone.

FRUEHAUF TRAILERS



*"Engineered
 Transportation"*

REG. U. S. PAT. OFF.

IF IT'S A TRANSPORTATION PROBLEM—CONSULT A MOTOR CARRIER

COMMERCIAL CAR JOURNAL
 OCTOBER, 1939

When writing to advertisers please mention Commercial Car Journal

(CONTINUED FROM PAGE 82)

showed a two to five chance of not paying. It all depends on who does the recapping.

By having one man responsible for keeping tires of proper balance and tread on an outfit, we can and do hold the driver responsible for the proper inflation and care of his tires. However, our tire man occasionally checks the air pressure in all tires—so that we know the driver is properly watching his tires, and the driver knows that we are checking him.

We find that the *spare* tire is often neglected when airing tires. A spare with only 50 lb., put on next to a tire with 80 lb. means many unnecessary blowouts. Hence we insist that the spare tire be checked every time the others are. Before adopting this tire program we were averaging about 45,000 miles on a tire. Now we get about a 60,000-mile average. As we have about 250 tires on highway units, and about 80 tires on the city delivery, an increase of about one-third in our tire mileage represents a considerable saving, to say

nothing of the better service made possible by eliminating the many delays on roads caused by the blowing out of tires.

Improved Gas Tanks and Shop Welding

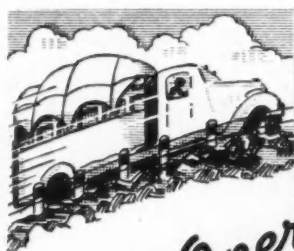
An electric welding machine bought for around \$50.00 has much increased the shop's efficiency. When it was purchased no one in the shop had used one. But a little schooling and practice has made good welders out of our mechanics. The schooling was given by the manufacturers and was conducted in our own shop.

With the use of this machine we now make our own gas tanks. They are made of 12-gage steel with baffle plates of the same material. A set of two costs us about \$35 installed. The special advantage is that we are now able to carry gas enough for a round trip, which permits us to buy in such quantity that we can save from four to five cents a gallon. Each tank is made to fit the individual tractor. In this way we feel that the safest mounting can be made, because we build each tank with the idea of the maximum protection from outside damage. The chance of having a tank side-swiped has been reduced to a minimum. The welded baffle plate and the heavy material used makes a tank that is much more substantial than most commercial built tanks costing twice the amount of our complete installation. We had a recent test of strength when one of our tanks was run into head-on by another truck, but the tank resisted the shock. Safe tanks reduce the fire hazard.

Our shop electric welder, together with our acetylene torch, has saved us many dollars in job bills, besides the hours saved by keeping our units in service. Another angle not to be overlooked is safety. Repairs are made immediately that otherwise would wait for a day or two. With the help of the instructions given by the manufacturers of welding apparatus, no shop should hesitate on the ground that they have no welder in their organization. A little study and practice starts any good mechanic on his way, and as time goes on he will soon become a good welder for all general shop purposes.

Brakes Adjusted for Drivers

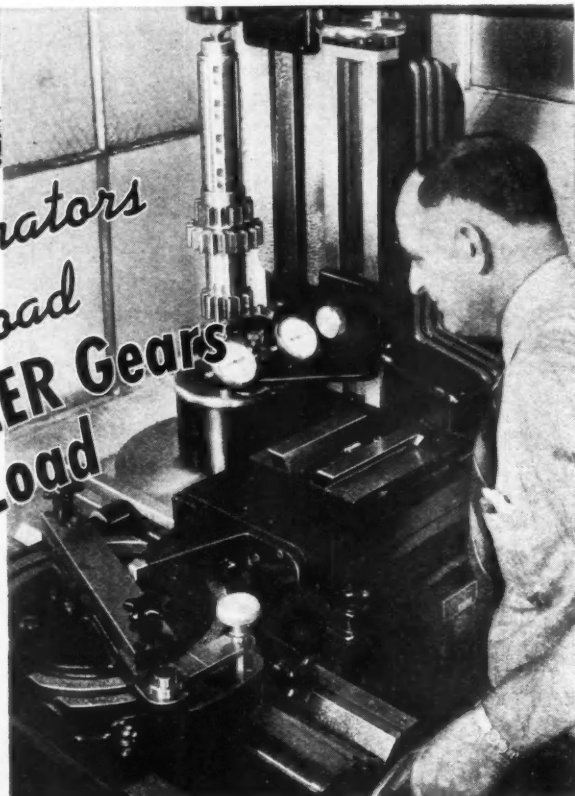
One feature of our shop practice (TURN TO PAGE 86, PLEASE)



**Truck Operators
Fear No Road
When FULLER Gears
Carry the Load**

No sissies—these FULLER Transmissions. They soak up punishment with never a howl. The bigger the loads, the tougher the roads, the more they demonstrate their stamina and dependability. Yet they're flexible, too, for all kinds of service—quiet in operation—easy shifting.

It takes quality gears to make transmissions like these—and FULLER has spent 25 years in developing the trained personnel, the precision methods and the specialized machinery that make possible the

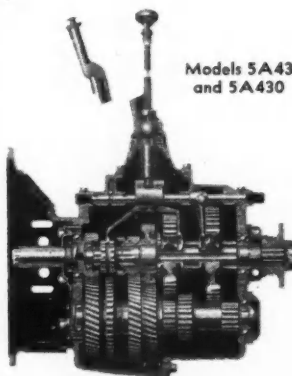


Special machine for checking tooth profile and spacing

superlative quality of FULLER gears today.

FULLER engineers have contributed to the development of new testing equipment and new production machines for gear finishing. These highly successful new tools, have permitted even greater precision, without increasing costs.

Most of America's best trucks today offer FULLER transmissions, as standard or optional equipment. It pays to specify FULLERS!



Models 5A43 and 5A430

FULLER

FULLER MFG. CO.
Kalamazoo, Mich.

Heavy Duty Transmissions

When writing to advertisers please mention Commercial Car Journal

COMMERCIAL CAR JOURNAL
OCTOBER, 1939



TIMKEN

TAPERED ROLLER BEARINGS

The resemblance between individual TIMKEN Tapered Roller Bearings goes far beyond mere appearance. It extends to the very roots of the superior performance for which TIMKEN Bearings are world-renowned . . . precision, smoothness, stamina.

That is why, when you replace one *genuine* TIMKEN Bearing with another in your truck or bus, you are assured of the continuation of the same enduring bearing service that the vehicle manufacturer inaugurated when he installed TIMKEN Bearings as original equipment.

That means thousands more "Miles of Smiles".



THE TIMKEN ROLLER BEARING COMPANY, CANTON, OHIO

(CONTINUED FROM PAGE 84)
 tices is planned especially for our drivers. This is the adjustment of our tractor and truck brakes. We feel that the brakes of the truck of a good driver should be adjusted largely to suit his own individuality. That is, one driver will want a so-called "soft" brake and another equally skilled driver will want a "hard" brake. So our drivers have come to understand that there will be no quibbling or delay in the shop.


in getting their brakes tightened or loosened to meet their exact desires.


Another of our shop practices is to make an accurate written record of every truck maintenance or repair job that should be done. This is because we have found that the verbal repeating of "things that should be done" leads to possible forgetfulness, and the inability to check up on who is responsible for neglect.

We feel that another of our shop rules which has helped us a lot in

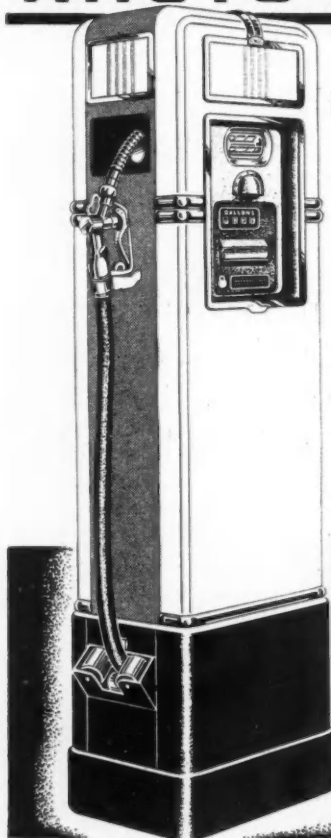
cutting our fleet maintenance costs, is to give prompt attention to even the smallest of needed truck adjustments or repairs. Previously, there was a tendency to wait until there was an accumulation of several little needed jobs on a truck, since there would be economy of shop time in doing them all at once. But not so today. Each item of repair, no matter how small, is handled at once.

We believe this promptness, supplemented by the other shop practices described above, is one of the important reasons why we have been able, during the past few years, to improve our fleet safety record so greatly; and able to reduce the cost of our truck insurance by two-thirds, and the cost of our freight handling claims by more than three-fourths.





XACTO PRINTING PUMP

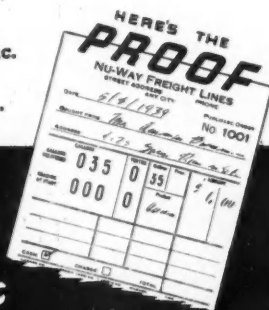


...AND YOU'LL KNOW WHERE
EVERY GALLON GOES!

...Say the many fleet (and station) owners who are using "the pump that PRINTS a ticket for every delivery". Its interlocked, automatic operation prevents fraud... provides complete control of fuel deliveries. Check all fills, at the terminal or on the road, with the Xacto Printing Pump... it's like being on hand yourself. Let us explain how it can help YOU!

S. F. BOWSER & CO., Inc.
 1358 Creighton Ave.
 Fort Wayne, Ind., U.S.A.

IT'S
Fool-Proof
 IT'S
Automatic
 IT'S
Accurate!



THE WORLD'S OLDEST GASOLINE PUMP MANUFACTURER

EARS TO THE GROUND

(CONTINUED FROM PAGE 17)

tion one of this department's agents discovered that all of the new Chevrolet truck models are equipped with hypoid rear axles and the engines are tilted a few degrees. His notes also indicate that there are a number of appearance changes.

Better Bushings

A new bushing has come into existence, according to our parts department man. This bushing is a bushing within a bushing, but instead of a bushing to bushing contact there is a liner of Neoprene or rubber between the bushings. The purpose is to take up misalignment and eliminate noise. Is that clear?

Aluminum Arguments

Space will be given next month to details of an aluminum engine bearing.

Heavy History

What with all the fanfare about new passenger car models and whatnot it appears that we have not given much attention to truck producers. COMMERCIAL CAR JOURNAL will rectify this condition next month by supplying the truck industry with a detailed description of every new vehicle available. Among them will be a whole heavy duty line by IHC and the new lines of Chevrolet, Ford, Dodge and others.

Differential Dual Discourse

A comprehensive 40-page bulletin entitled "Let Your Tires Roll," just issued by the Fruehauf Trailer Co., tells the story of Differential Dual Wheels. After describing the principle of operation, the bulletin gives test and performance data substantiating the claims of longer tire life, uniform tire wear, fuel and oil economy, and driving safety achieved with differential dual wheels. It's yours for the asking. Check "A" on the post card following page 96.

TRUCK SHOW

(CONTINUED FROM PAGE 29)

public relations more highly than ever. A large amount of space has been set aside for purposes of public education on matters pertaining to the highway haulage industry.

J. E. Julian, president of the National Tank Truck Association; Harvey C. Fruehauf, president of the Fruehauf Trailer Co.; F. F. Staniford, president of Mack International, and other leading executives in the transportation industry have come forward endorsing the educational feature of the show.

"A major objective of the show," states J. F. Winchester, "will be to bring before the public a graphic picture of what highway transportation means to our national wealth. While, of course, the individual exhibits will be chiefly concerned with the products manufactured by the exhibitors the transportation show will by no means be a purely commercial display."

In addition to the organizations named, a number of civic and transportation groups including the Chicago Chamber of Commerce and the Cartage Exchange of Chicago have arranged programs of interest to motor truck operators of all types.

It is expected the show will present a special opportunity for manufacturers of army equipment to display their latest models. Contact has been made with the Honorable Louis Johnson, Assistant Secretary of War, in soliciting Army cooperation in tying in an educational exhibit of Army equipment at the truck show and rapid strides are being made along these lines. Motion pictures in connection with Army activities are expected to be a feature. Exhibitors desiring to display army equipment at the truck show may do so as the show management is prepared to secure releases for exhibition of this equipment.

Robert R. Wyker is now sales manager of Ensign Carburetor Co., with headquarters at the main office in Huntington Park, Cal. He is also assistant to the president. Ralph G. Abbott has been named branch manager at Dallas, Texas, and Roy Mylander, formerly in the Dallas territory, will be in charge of field service with headquarters at the factory.

COMMERCIAL CAR JOURNAL
OCTOBER, 1939

When writing to advertisers please mention Commercial Car Journal

GET THE LOWEST COST
PER MILE WITH
MCKAYS!

*This Year Get
MCKAYS!*



LONGEST WEAR is the reason why so many large fleets pick McKay Truck Chains. "Mileage champion" of them all is **Multi-Grip**. This is the bar-reinforced truck chain with **DOUBLE** reinforcing bars. **Result**—lowest cost per mile; greatest and longest-lasting traction.

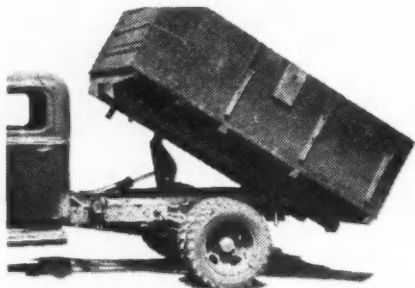
Delays Avoided! The McKay Klip-Lock Fastener is the "speed champion." Standard on all Regulars, Extra-Heavies, and Multi-Grip Truck Chains. Arrange now with your nearest McKay Jobber for prompt deliveries. For his name, write . . .

THE MCKAY COMPANY, PITTSBURGH, PA.
Sales Offices: York, Pa.

MCKAY TRUCK CHAINS
« JOBBERS EVERYWHERE »

E-Z-LIFT

HAND HYDRAULIC HOIST DUMPS HEAVY LOADS FITS ANY BODY



SAFE, RELIABLE

WT. 300 LBS.

**GUARANTEED TO DUMP 5 TONS
THE PISTON PUMP DOES IT
LOW PRICE**

FOR COMPLETE INFORMATION
KNAUSS-CASSEL MFG. CO.
101 7th ST., PEORIA, ILL.

FEDERAL

THE HANDSOMEST TRUCK ON THE ROAD
37 models . . . 3/4 to 8 ton

4 and 6 wheelers

conventional and cab-over-engine types

FEDERAL MOTOR TRUCK CO.
Detroit, Michigan

JONES PORTABLE TACHOMETER



The world's largest operators of commercial vehicles use Jones Portable Tachometers to check engine speeds for tune-ups, and setting governors, etc. Here are a few: Standard Oil Co., of La., N. J., N. Y.; Shell Petroleum Co., Atlantic Refining Company, Tidewater Oil Company, Keeshin Motor Express, Mack Trucks, Brockway, U. S. Navy.

Direct, instantaneous reading
JONES-MOTROLA-STAMFORD, CONN.
432 FAIRFIELD AVENUE

DIARY

(CONTINUED FROM PAGE 28)

annual tire costs assumes still greater significance.

Several factors enter into this saving:

(1) We now use special stop-start tires for the dual rear wheels, which, though costing a great deal more than the high pressure types formerly used, help us obtain a 250 per cent increase in tire mileage per truck.

(2) Improved methods of recapping now enables us to obtain 75 per cent of new tire mileage from our re-capped tires at one-third the cost of new tires.

(3) We no longer carry spares, except on the few units that make long out of town runs, yet due to improved quality of the tires now in use and more careful surveillance of inflation, we do not average one tire service call a week in the entire fleet. We thus save a considerable investment in spare tires.

(4) Improved status of tire inflation made possible by hearty driver cooperation, which we encourage by occasionally offering cash prizes of \$10 and \$5 for the best individual records in tire inflation. At unscheduled intervals we now check the air on individual trucks. We then return the readings to the drivers on a small mimeographed slip which contains the main heading "Check Your Tires," and a secondary head reading, "We Did and Found the Following." Printed headings provide space for each separate tire reading as compared to correct pressure figures below.

Though we now use higher grade lubricants on which prices have advanced materially since 1935, we have reduced total grease and oil costs approximately 40 per cent. It is convincing proof to us that the highest grades are most economical

WOOD
HYDRAULIC

HOISTS & DUMP BODIES
Every Size and Type
for EVERY HAULING JOB

GAR WOOD INDUSTRIES, INC.
DETROIT, MICHIGAN
Branches and Distributors Everywhere

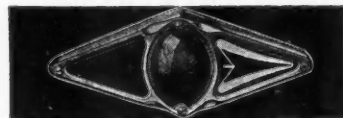
**KEEP YOUR
VEHICLES MOVING
ECONOMICALLY**

with

**HALL VALVE SERVICING
EQUIPMENT**

Ask Your Jobber or write
THE HALL MFG. CO.
TOLEDO, OHIO

For Safer Small Trucks



TELEOPTIC DELUXE

APPROVED—DURABLE—SAFE
WRITE FOR DETAILS ABOUT THIS
AND OTHER TELEOPTIC SIGNALS

The Teleoptic Co., Racine, Wis.

CLASSIFIED ADVERTISEMENT
WANTED TRUCK TIRES FOR RECAP-
PING ANY QUANTITY OR SIZE—ALSO
SCRAP TIRES. BOX 1715 COMMERCIAL
CAR JOURNAL.

— Next Month —

The 4th Annual
"HIGHWAY TRANSPOR-
TATION SHOW" Issue of
COMMERCIAL CAR
JOURNAL

— Watch for It —

**WHEN THIS
HAPPENS**



**FOR VALVE
PORTS AND
INSIDE
CYLINDER
CRACKS**

DO THIS

WONDERWELD



Seal cracked blocks permanently with WonderWeld. Gives a metallic seal that holds. That's the real difference in WonderWeld. This scientific formula combines three liquids and five solids. Repairs water leaks in motors in 30 minutes—not 30 hours. Sold by jobbers. Folder FREE! Miller Mfg. Co., Camden, N. J.

YOU'LL NEVER KNOW

● THE PROFIT OPPORTU-
NITY in Fitzgerald Gaskets until
you handle them.

THE FITZGERALD MFG. CO., TORRINGTON, CONN.

**FITZGERALD
GASKETS**

When writing to advertisers please mention Commercial Car Journal

COMMERCIAL CAR JOURNAL
OCTOBER, 1939

Sterling MOTOR TRUCKS


DIESEL AND GASOLINE

GREATER PROFITS

Cost sheets tell the story! Net savings of over \$15,000.00 per truck. An achievement of Sterling Diesel powered motor trucks—trucks which have traveled in excess of one-half million miles and are still in operation.

Be sure of maximum returns on investment. Select Sterling motor trucks for superior performance and lower operating costs. Write for full information.

STERLING MOTORS CORPORATION
MILWAUKEE WISCONSIN



**OVER 70% OF ALL
MAKES OF TRUCKS
AND BUSES ARE
Zollner EQUIPPED**

ZOLLNER

HEAVY DUTY PISTONS
ZOLLNER MACHINE WORKS FORT WAYNE, IND.

WALKER



- No Gear Shifting
- Lower Operating Costs
- Greater Fuel Economy
- Reduced Maintenance Costs
- More Efficient Power Transmission
- Start-stop Time Reduced

WALKER VEHICLE COMPANY

DIVISION OF THE YALE & TOWNE MFG. CO.
Manufacturers of Electric and Gas-Electric Trucks
101 WEST 87th STREET, CHICAGO, ILLINOIS

IT PAYS TO BUY

EDWARDS QUALITY SEMI-TRAILERS

EDWARDS IRON WORKS, INC.
SOUTH BEND, INDIANA

in the long run. Eastern oil in present use costs us 50 cents a gallon as compared to 30 cents a gallon western oil with asphalt base that was used in 1935. Today we pay 13 cents a pound for a fibrous water-resistant type of grease, as compared to 8 cents or 9 cents a pound that we paid for cup grease in 1935.

It is true that we added eight new trucks to our fleet in 1937, which would automatically reduce the 1938 oil consumption. However, 32 new trucks were purchased in 1936, yet 1937 showed an oil mileage of 150 miles per quart as compared to 190 miles per quart in 1938, giving definite proof of economies that may be voluntarily effected.

Of outstanding importance in these savings is the oil analysis service that we have been using since October, 1936, when 10 trucks were out on an oil analysis basis, with results so entirely satisfactory that in January, 1937, the whole fleet was registered for this service.

Previously we used to change oil at 1000-mile intervals. Now we drain a crankcase only on the advice of our oil analyst, as a result of which we obtain an average of 3500 miles between oil changes, based on a minimum of 500 and maximum of 5000 miles. The analysis service also aids preventive maintenance by revealing any unwarranted condition. An immediate telephone reminder supplements the regular written report. Water leaks, excessive dilution, bearing metals or the like are quickly checked, thus eliminating a great deal of mechanical trouble that might otherwise develop. Savings on oil alone pay the full cost of this service.

We Save on Labor

Through carefully detailed preventive maintenance we have reduced the staff of nine maintenance men employed in 1935, to six men employed in 1938, eliminating three full time mechanics.

Our present staff consists of two mechanics, one car greaser, one gas pump attendant, one car washer, a half-time mechanic from the main plant who keeps bodies and fenders in condition and part time all around work on the part of the fleet superintendent. This staff of maintenance men also takes care of the out of town units and passenger cars not included

(TURN TO NEXT PAGE, PLEASE)

WHEN WHEELS STOP TURNING

EXPENSES PILE UP FAST!



Alemite Power Guns Help Prevent Costly Breakdown Delays

WHEELS on trucks, busses, tractors have to keep turning to make money for their owners. The minute those wheels stop, for any reason, profits stop and expenses pile up fast! That's why so many fleet owners and contractors depend on Alemite Power Guns for lubrication—to keep wheels turning dependably, with minimum maintenance cost!

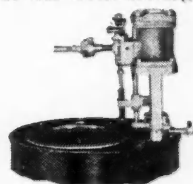
That man up there is greasing a steering knuckle on a bus that weighs 15,200 pounds. Every 500 miles that knuckle gets a "shot" from an Alemite Model 6528 "Rock Crusher" Power Gun. This Gun—built by Alemite for just such heavy duty requirements—has the ruggedness and the power to get into tough, tight bearings—lubricating and maintaining them against expensive repairs.

Alemite Power Guns guard profits by helping prevent expenses. They can save a lot of money by helping you keep your wheels turning. Write today for our latest catalog!



Alemite Power Gun
Model 6528

Holds 40 lbs. of lubricant; develops 33 times available air pressure; operates on 100 to 200 lbs. of air. Easily portable. Patented construction eliminates "air pockets."



Alemite Barrel Pump
Model 6700

Pumps from original drum; operates on 75 to 175 lbs. of air; develops up to 6000 lbs. pressure, depending on piston ratio. May be used with single or multiple outlets.

ALEMITE

REG. U. S. PAT. OFF.

A Division of Stewart-Warner Corporation
1876 Diversey Parkway, Chicago, Ill.

Stewart-Warner-Alemite Corporation
of Canada, Ltd., Belleville, Ontario

**WORLD'S LARGEST MANUFACTURER OF
LUBRICATION PRODUCTS**

FREE

Cleanliness for
12 of Your Trucks

THERE'S no better advertisement of your efficiency and your firm's qualities than a clean truck. And there's no better dirt-chaser than No-Film! This concentrated liquid is designed for truck use. It cleans thoroughly because of its energetic chemical action. It never leaves paint-killing film!

Prove it and profit . . . try No-Film FREE! Send your name and address, the number of your trucks, and your jobber's name. We'll send you enough No-Film to clean a dozen trucks . . . plus the well-known Technical Bulletins on Truck Finish Maintenance! The Mapor Corp., engineers-chemists, 151 W. 46th Street, New York.

BEFORE YOU START—

THINK of the FINISH

NO-FILM

REG. U. S. PAT. OFF.

BUY THIS GENUINE

1/2" SPEEDWAY \$24.50
DRILL



- And get these features:
- High Torque SpeedWay Drill Motor
 - Streamlined Air Cooled Die Cast Case
 - Natural Grip Direct Thrust Breast Plate Handle
 - Removal Side Handle for Close Quarters
 - Self Aligning Oilless Bearings
 - 500 R.P.M. Operating Speed
 - Smooth Sliding Thumb Switch
- Complete with hand operated 3-jaw 1/2" chuck, rubber covered cord, unbreakable plug.

SPEEDWAY MFG. CO.
1840 S. 52nd St., Cicero, Ill.

For running-in new and rebuilt engines use auxiliary lubricants containing "dag" Brand colloidal graphite.

Acheson Colloids Corporation

Port Huron



Michigan

*REG. U. S. PAT. OFF.



For Toughest Jobs EVERYWHERE

- Traction on all four or all six wheels enables these trucks to go places and do things no "ordinary" truck would attempt. Prices much less than you would expect. Ask for literature.

MARMON-HERRINGTON CO., INC.
Cable Address Maron • Indianapolis, Ind., U.S.A.

(CONTINUED FROM PAGE 113)

in the statistical comparisons, making labor costs actually apply to a total of 71 units, as compared to 56 units represented by cost figures in the balance of items in the table.

All maintenance work is done in the daytime with the exception of washing, greasing, oiling and gassing, which is done by night attendants. The gas man also takes care of flats during the night hours. This arrangement gives us the best working capacity per man, and enables us to maintain a minimum stock of parts, as compared to night work which involves delayed completion of repairs when certain parts are out of stock.

And Practice Preventive Maintenance

We credit the lesser amount of repair work which has enabled us to reduce our maintenance staff to the fact that beginning with 1936 we have adhered closely to a preventive maintenance schedule. We use this schedule exactly as indicated in the system outlined by General Motors with but one exception. We find it more practical to gage our overhaul periods for engines according to oil consumption and general performance, rather than by mileage stages, due to the short stop-and-go hauls and wide variety of distances and roads that we travel. When oil consumption drops below 60 miles per quart, we then either install new rings, overhaul the engine or install a new engine.

Brake inspections are made at least every 5000 miles; spark plugs and fuel pumps are renewed at 15,000 miles; generators and starters overhauled once a year; cooling systems serviced once a year. Some of our clutches are pulled down and inspected every 8000 or 10,000 miles. On others we can tell by the adjustment just how much leeway we have.

The preventive maintenance service record which we use in conjunction with the preventive maintenance schedule details a ten-point engine check; six-point cooling apparatus check; five-point check for front end; three-point for steering apparatus; five-point for rear end; five-point general check; two-point wheel and brake check; body check and a three-point lubrication check. When complete this form becomes a work sheet record designating each operation performed and the mechanic who performed it, condition of truck, total

Handy BATTERY CHARGERS

Low Cost Battery Charging

Write for Free Bulletin No. 68 telling about the New HANDY Battery Chargers and Testers. At Right: No. PG Charger, price, \$23.00 less bulb.

BALDOR ELEC. CO.
4340 Duncan Ave.,
ST. LOUIS, MO.



GENERAL OIL FILTER

- Saves Oil and Reduces Upkeep.
- Easy to install.
- Low initial cost.
- Low cost, quick changeable, sealed armored cartridge.

SPECIAL FLEET OWNERS PRICES

GENERAL FILTERS, INC.
DETROIT



GUNK • The High Performance Motor Block and Chassis Degreaser



- Eliminates fire hazard . . . costs no more to use than oily, ineffective kerosene or similar petroleum solvents • Ask for literature.

CURRAN CORP. • MFG. Chemists • Malden, Mass.

cost of work done and time of issuing the report.

An enlarged wall chart containing this record in summarized form, which hangs in the office of the fleet superintendent, is maintained with code signs in order to keep before the fleet manager a perpetual, up-to-the-minute picture of major preventative maintenance measures for each truck in the fleet.

We forestall accidents that might result from misinterpretation of a driver's verbal report of car trouble by requiring every operator to register all car trouble on a "Motor Vehicle Trouble Ticket," which lists twelve motor troubles and provides five blanks for additional causes. This form requires the signature of the driver, the mechanic who completed the work, and the fleet superintendent, and contains date when work was



**Money-Wise Fleet Operators
Use
BEAURLINE FOUNTAIN BRUSHES**
(Patented)

Beaurline, the original fountain type car washing brush, is designed to save time, effort and space in busy fleet shops. That's why money-wise fleet operators everywhere are turning to Beaurline for the solution to their washing problems.

Write for complete information on several new models, shapes and sizes, and for new low prices

BEAURLINE FOUNTAIN BRUSH CO.
1243 S. Wabash Avenue, Chicago

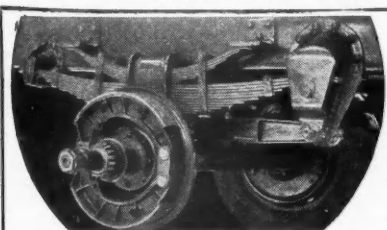


Will Handle 13 to 15 Tons! — Thornton
Four-Rear-Wheel Drive, engineered into standard 1 1/2- to 3-ton chassis—extra capacity, greater traction, double pulling power! Does work of trucks twice as large at almost half cost. Write today Thornton Tandum Co., 8701 Grinnell Ave., Detroit

THORNTON-eered
for TRACTION

**REPAIR KITS
FOR RECONDITIONING
Vacuum Power Brake
Cylinders and Valves
for TRUCKS
TRACTORS
TRAILERS
BUSES**

• Write for Catalog 16-A covering our complete line. •
POWER BRAKE PARTS MFG. & SALES CO.
4418 Woodward Ave., Detroit, Mich.



GRAMM TRAILERS
"Ask the man who pulls one"
P Series Timken Power Brakes
Now Standard
GRAMM TRAILER DIVISION, Delphos, O.

completed and time it was noted and report filed by the superintendent. (See illustration).

Truck Cost Records

Not the least important of the many factors contributing to lower operating costs is the improved system of cost record accounting which was installed in 1936, which provides us with a clear, quickly accessible list of cost totals that give us a *positive control* of operating expense.

The daily Truck Cost record is a long, narrow ledger form containing vertical tabulations for route numbers and truck identifications. (See illustration).

Daily records covering the whole fleet are made on a similar form for quick gas and oil check. We use the alphabetical system of truck identification with combinations of letters such as radio stations use. Each truck thus retains its original identification as long as it is in use, regardless of changes in routes. (See illustration.)

I make it my personal responsibility to make all entries in this system, which brings me closer to the picture of our operating costs than if I merely scanned over the completed entries. All totals and monthly recaps are computed mechanically in the office. Though we use this system in conjunction with the punch hole accounting mechanism, wherein each truck record is kept on an individual board, in principle it may be adapted to any system of accounting.

Under fixed expense we segregate depreciation costs for the chassis and body of each truck. We do not include depreciation of tires among the items listed but charge out the full cost of the tires as they go on the trucks, thus eliminating a great deal of detail work in record keeping. Rags, nuts, bolts, cotter pins and various other small items are included in miscellaneous expense under Variable Expense. Labor involved in such small replacements is also pro-rated under both the Fixed and Variable expense headings.

Due to the great variation of our routes and frequent switching about of trucks from one route to another we do not find it practical to set up a reserve fund or budget for repairs.

Finally, our Vehicle Record offers a quick, concise reference for obtaining (TURN TO NEXT PAGE, PLEASE)

Fleet Owners
**CHOOSE
BAKER
SNOW PLOWS**



Among large fleet owners who own Baker Snow Plows are such nationally known names as

Eastman Kodak Co.
Ford Motor Co.
General Electric Co.
Packard Motor Car Co.
Standard Oil Co.
General Motors
E. I. duPont de Nemours
Western Electric Co.
Swift and Co.
Hercules Powder Co.
Illinois Steel Co.
Garlock Packing Co.
Public Service Corp.
Chicago Surface Lines
Kimberly-Clark Corp.
Anaconda Wire & Cable Corp.
Draper Corp.
Buick Motor Co.
Tidewater Oil Co.
Solvay Process Co.

There are 21 models of Baker Snow Plows for any motor truck and for leading industrial tractors, large and small. You can depend on a Baker.

Write for Snow Plow Bulletins

THE BAKER MFG. CO.
571 Stanford Ave.
Springfield, Illinois

Oldest Makers of Snow Plows for Streets and Highways.

BAKER
SNOW PLOWS

**REDUCE
TON-MILE COSTS
ON SEVERE
SCHEDULES WITH
PRECISION-
MANUFACTURED**

**AUTOCAR
TRUCKS**

ARDMORE, PA., AND LEADING CITIES

**One of the most complete
lines in the business—each
tire built to give you
more miles for less money.**

THE GENERAL TIRE & RUBBER CO.

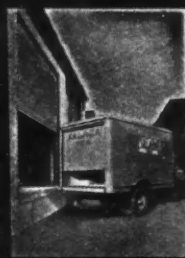
AKRON, OHIO

*In Canada—The General Tire & Rubber
Co. of Canada, Limited, Toronto, Ontario*

**GENERAL
TRUCK TIRES**

KINNEAR TRUCK DOORS

Also Doors for Buildings



ALL METAL . . .
. Coils like a
window shade, out
of the way
**CONVENIENT
BURGLAR PROOF
FIRE PROOF
MORE DURABLE**

Write for Details

KINNEAR
Manufacturing Company
2100-20 FIELDS AVE.
COLUMBUS, OHIO

**—More Profits
per Job with
HEIL**

Bodies and Hoists

**Safe — dependable — complete line for
all types of service. Ask for free catalog.**

THE HEIL CO.

Milwaukee, Wisconsin Hillside, New Jersey

Hoists — Bodies — Tanks — Road Scrapers — Snow Plows
Bottle Washers — Dehydrators — Oil Burners — Water Systems



(CONTINUED FROM PAGE 115)

ing car, motor and key identification details. This card record is issued separately for every car or truck. One is reserved for office computation of depreciation. (See illustration.)

Wholehearted cooperation of the drivers is an important factor in reducing operating costs. We believe that we have earned this cooperation by convincing our drivers that we never want them to take out a truck that is not absolutely safe.

Truck operation in our business dwindles down to a matter of *route costs*, inasmuch as we figure profit and loss on every route. If a certain truck keeps that route from showing a profit, something must be done about it. We work on this angle with the driver, by pointing out to him that through careful driving he can save as much money per day in operating expense as would result from the net profit on several quarts of milk.

ICC Denies Insurance Revision

For hire carriers will be interested in a note from the ICC. The Commission has refused to revise Rule VIII of its insurance regulations which specifies that an insurance company issuing policies covering motor vehicles and cargo within ICC jurisdiction must be licensed in every state in which the truck operates.

American Trucking Associations, Inc., and others had contended that the present rule tended toward the creation of monopoly interests and restricted the insurance market available to truckers. The association urged that the rule be amended to include insurance companies licensed only in the home state of the carrier.

But the Commission came back with the fact that no less than 225 insurance companies had filed certificates with the ICC covering bodily injury and property damage and an additional 218 firms covering cargo liability. It further stated that no substitute rule was at present apparent but that it would "explore" the possibilities of a complete inquiry to determine whether it would have "reasonable expectation of success."

CUT WASH RACK COSTS



Have smarter-looking, cleaner trucks at lower cost. Use WonderWeld Magic Car Wash. Self-drying. No more chamoising to remove water and streaks. Cuts time to 15 minutes. Pint, gallon and drum containers. See jobber, or send dime for single wash trial sample.

Miller Mfg. Co., 1220 Kaighn Ave., Camden, N. J.

**WONDERWELD
MAGIC CAR WASH**

FUEL and MAINTENANCE ECONOMY

Through
ENGINE CONDITIONING
by
CONTROLLED OXIDATION

Oxylator Company
Grand Rapids, Michigan

THUMB-SCREW
ADJUSTMENT
BALANCED
(8-SIDE) PULL

OVER
LAPPING
SEAL

ONE
SIZE FOR
MANY

ADJUSTABLE
FOR SIZE

TRADE MARK
NOC-OUT
THE HOSE CLAMP WITH
THE THUMB SCREW

Seals absolutely against
leakage of antifreeze,
radiator connections, or
heater hose. Type A.
Adjustable, the Clamp
with the thumb screw.
1 size fits many. Type
GBH for heater hose.
Type GBB for Bonnet
Brakes.

WITTEK MFG. CO.
4305 W. 24th Pl., Chicago, U.S.A.

Be Sure to Specify



AMERICAN BOSCH
Fuel Injection Equipment

For Diesel Engines

AMERICAN BOSCH CORPORATION
Springfield, Mass. New York. Chicago. Detroit.

**FRINK
SNO-PLOWS**

REG. U.S. PAT. OFF.

**Both "V" TYPE and
ONE WAY BLADE TYPE**

hand or power hydraulic control

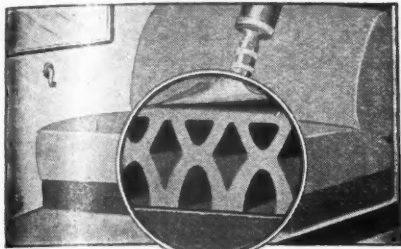
**FOR ALL MOTOR TRUCKS
FROM 1½ to 10 TONS**

Write for catalog 38AC and 38BC with discount to truck dealers.
CARL H. FRINK, Mfr., CLAYTON, 1000 E. 11th, N. Y.
DAVENPORT-BESLER CORP., DAVENPORT, IOWA
FRINK SNO-PLOWS OF CAN. Ltd., TORONTO, ONT.

**COMMERCIAL
CAR JOURNAL**

**Is the Leading Publication
in the TRUCK FLEET Field**

ECONOMIZE with Black Diamond All-Rubber SEAT CUSHIONS



Increase the life of your truck cushions—decrease their upkeep expense by equipping with Black Diamond all-rubber seat cushions and back rests. They wear forever and will never let you down. Savings begin with their low first cost. Then you save by eliminating month-after-month upkeep costs. With the exclusive diamond grid construction, these cushions lead in comfort—in economy and durability. But first, get the facts that will convince you that, regardless of the job to be done, you should always install Black Diamonds. Made in every size to meet any requirement.

KARPEX MANUFACTURING CO.
1924 E. 19th Street, Indianapolis, Ind.

COMMERCIAL CAR JOURNAL

Is the Leading Publication
in the TRUCK FLEET Field

Available Trucks

Builders of fine Motor Trucks,
Tractors, Trailers and Buses
since 1910.

Capacities from 1½ to 10 tons.

Write for bulletin

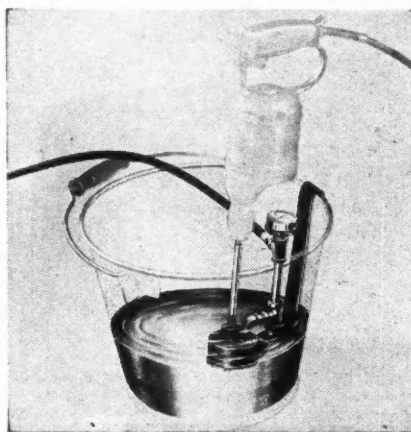
AVAILABLE TRUCK COMPANY
2501 Elston Ave. Chicago, Illinois

NEW PRODUCTS

(CONTINUED FROM PAGE 38)

Oil Leak Detector

A compact oil leak detector incorporating a standard gear-type pump with by-pass valve and pressure gage is offered by the Hastings Mfg. Co., Hastings, Mich. As shown, the device is built to clamp on any



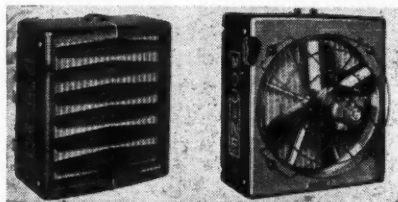
suitable container, is driven by an electric drill of ¼ in. size or over and operates on 2 qt. of oil. The device is offered free to fleet shops with the purchase of \$50 worth of Hastings rings or expanders. Full details from the manufacturer or distributor.

Magic Car Wash

A self-drying car wash said to dry clean and streakless without chamoising is offered by the Miller Mfg. Co., Camden, N. J. Known as WonderWeld Magic Car Wash it is mixed with clear water, 1 oz. to 10 qt. Only hosing is needed after the wash.

New Modine Unit Heater

A new line of Modine unit heaters features a deliberate attempt to silence sound, rust protection through Bonderizing, streamlined appearance and a new safety fan



guard. Greater volume of air has also been achieved. Full details of the new unit may be secured from Modine Mfg. Co., Racine, Wis.

AUSTIN

THE ACCEPTED STANDARD

Fifth Wheels

Landing Gears

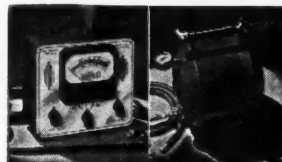
Pintle Hooks

Austin Trailer Equipment Company
Muskegon, Michigan

Manufacturers of Engineered Trailer Products

Free..

MANY VALUABLE
TESTING INSTRUMENTS AND SHOP
TOOLS



in exchange
for
Premium
Coupons
now on
every
box of

PEDRICK PISTON RINGS

Ask for your copy Free Premium Book

= St. Paul =

HYDRAULIC
HOISTS/BODIES

HYDRAULIC HOISTS and DUMP BODIES

Manufactured for over
27 Years by

**ST. PAUL HYDRAULIC HOIST
COMPANY**

MINNEAPOLIS, MINNESOTA
Sales & Service Everywhere

Trucktor

CREATES RELIABLE
6 WHEEL TRUCKS

PROFITABLE - ECONOMICAL
Safest Vehicles On The Road

THE TRUCKTOR CORPORATION
156 WILSON AVE. NEWARK, N. J.



DENMAN TIRES

DENMAN TIRE AND RUBBER CO., WARREN, OHIO

Designed to outlive several treads. The only tire with a built-in recap indicator.

Write for literature.



Advertisers' Index

This Advertisers' Index is published as a convenience, and not as part of the advertising contract. Every care will be taken to index correctly. No allowance will be made for errors or failure to insert



A C Spark Plug Div. General Motors Corp.65-101
 Acheson Colloids Corp. 114
 Alan Wood Steel Co. 110
 Albertson & Co., Inc. 110
 Alemite, A Division of Stewart-Warner Corp. 113
 Aluminum Company of America75-3rd Cover
 American Automatic Devices Co. 110
 American Bosch Corp. 116
 American Chain & Cable Co., Inc. 69
 American Cable Div., American Chain & Cable Co., Inc. 109
 Anthony Co. 110
 Austin Trailer Equipment Co. 117
 Autocar 116
 Autopulse Corp. 66
 Available Truck Co. 117

 Baker Mfg. Co., The 115
 Baldor Electric Co. 114
 Beaurline Fountain Brush Co. 115
 Bendix Products Division of Bendix Aviation Corp. 35
 Berger Mfg. Division12-13
 Blood Brothers Machine Co. 108
 Bowser & Co., Inc., S. F. 86
 Brown-Lipe Gear Co. 118
 Burch Corp., The 108

 Champion Spark Plug Co. 9
 Columbus - McKinnon Chain Corp. 58
 Connecticut Telephone & Electric Corp. 60
 Cummins Engine Co. 1
 Curran Corp., The 114

 Delco-Remy 104
 Denman Tire & Rubber Co. 117
 De Vilbiss Co., The 59
 Diesel Engine Division General Motors Sales Corp. 41
 Ditzler Color Co.2nd Cover
 Do-Ray Lamp Co. 110
 Dry-Zero Corp. 47
 Du Pont de Nemours & Co., E. I., Finishes Division, Refinish Sales 15

 Eberhard Mfg. Co. (Div. of the Eastern Malleable Iron Co.) 76
 Edwards Iron Works, Inc. 113
 Electric Storage Battery Co. 37
 Exide Batteries 37

 Federal-Mogul Corp. 96
 Federal Motor Truck Co. 112

Fitzgerald Mfg. Co. 112
 Fleming Mfg. Co.102-103
 Ford Motor Co. 90
 Four Wheel Drive Auto Co., Back Cover
 Frink, Carl H., Inc. 116
 Fruehauf Trailer Co. 83
 Fuller Mfg. Co. 84

 Gar Wood Industries, Inc. 112
 Gatke Corp. 72
 General Electric Co. 107
 General Filters Co. 114
 General Motors Corp. 8
 General Tire & Rubber Co. 116
 Globe-Union, Inc. 105
 Goodrich Co., The B. F. 120
 Goodyear Tire & Rubber Co. 7
 Gramm Trailer Div. Gramm Motor Truck Corp. 115
 Grinnell Co., Inc. 107
 Guide Lamp Div. of General Motors Corp. 81
 Gulf Oil Corp. 39

 Hall Mfg. Co. 112
 Handy Governor Co. 80
 Hansen Mfg. Co., A. L. 44
 Haskelite Mfg. Corp. 89
 Heil Co., The 116
 Hein - Werner Motor Parts Corp. 88
 Hercules Motors Corp. 77
 Highway Trailer Co. 2
 Homestead Valve Mfg. Co. 74
 Hoof Products Co. 82

 Imperial Brass Mfg. Co., The. 109
 International Chain & Mfg. Co. 10
 International Harvester Co., Inc. 16

 Jones-Motrola 112

 K-D Lamp Co. 3
 Karpex Mfg. Co. 117
 Kinnear Mfg. Co. 116
 Knauss-Cassell Mfg. Co. 112

 Lee Tire & Rubber Co. 42
 Leibing Automotive Devices, Inc. 110
 Lion Oil Refining Co. 73

 McCulloch Engineering Co. 3
 McKay Co., The 111
 McQuay-Norris Mfg. Co. 14
 Mack Trucks, Inc. 48

Mapor Corp., The 114
 Marmon-Herrington Co., Inc. 114
 Midland Steel Products Co. 62
 Miller Mfg. Co.112-116

 National Motor Truck Show, Inc. 92
 Niles Steel Products Div.12-13

 Oshkosh Motor Trucks, Inc. 61
 Oxylator Co. 116

 Packard Electric Division General Motors Corp. 71
 Pines Winterfront Co. 70
 Power Brake Parts Mfg. & Sales Co. 115
 Prest-O-Lite Battery Co., Inc. 63

 Reo Motor Car Co. Front Cover
 Republic Steel Corp.12-13

 S K F Industries, Inc. 94
 St. Paul Hydraulic Hoist Co. 117
 Salisbury Axle Co. 119
 Service Recorder Co. 40
 Shuler Axle Co., Inc. 68
 Snap-On Tools Corp. 108
 Speedway Mfg. Co. 114
 Spicer Mfg. Corp. 119
 Standard Oil Co. (Indiana) 11
 Steel & Tubes, Inc.12-13
 Sterling Motors Corp. 113
 Stewart-Warner Corp. 67
 Studebaker Corporation 93

 Teleoptic Co., The 112
 Texas Co., The 4-5
 Thompson Products, Inc. 6
 Thornton Tandem Co. 115
 Timken-Detroit Axle Co. 99
 Timken Roller Bearing Co. 85
 Toledo Steel Products Co. 45
 Trailer Company of America. 79
 Trucktor Corp., The 117
 Truscon Steel Co.12-13

 Union Drawn Steel Division.12-13

 Veeder-Root, Inc. 108

 Wagner Electric Corp. 95
 Walker Mfg. Co. 46
 Walter Motor Truck Co. 106
 Walker Vehicle Co., Div. of the Yale & Towne Mfg. Co. 113
 Watkins Babbitting Service. 96
 Waukesha Motor Co. 43
 White Motor Co. 87
 Wilkening Mfg. Co. 117
 Willard Storage Battery Co. 91
 Williams & Co., J. H. 78
 Wittek Mfg. Co. 116
 Zollner Machine Works. 113